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The Profession of Dietetics[1]

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YOU ARE about to enter a profession. Dietetics is a new profession, but it has emerged from one of the most ancient of the professions, that of medicine. It is fitting, therefore, for me, a member of that old profession, to tell you something about the nature of professions in general and of the responsibilities imposed by them.

NATURE OF A PROFESSION

What is a profession? Most people think they know the answer, but in point of fact most people are altogether ignorant of the nature of professions. The popular usage of the words "profession" and "professional" is very loose, which adds to the confusion. If you consult the Oxford dictionary, you will find three separate and distinct meanings attached to the three related words: "profess," "profession," and "professional."

The first meaning relates to a declaration of belief in some religion. This perhaps does not apply to what we are considering, but we shall later see that there may be a connection. Another use of the words applies to the theater and athletics. In a form of slang, actors and other people working in the theater are lumped together as the "profession" and spoken of as "professionals." Likewise, baseball players and other sportsmen who are paid for play are called "professional." This has nothing to do with what we are discussing.

The third meaning is that with which we are at once concerned. The definition in the Oxford dictionary reads: "A vocation in which a professed knowledge of some department of learning or science is used in its application to the affairs of others or in the practice of an art founded upon it." This defines our field, and you will note especially that there are two points of emphasis: the first involves *acquired knowledge* in one or more departments of learning or science; the second is the *application* of that learning by practitioners to the affairs of others. The definition excludes on the one hand vocations which do not require intellectual attainments. On the other hand, it excludes scholars, as in universities and institutes, who are engaged only in learning or research without emphasis on application. In a ranking based only on intellectual activity, this last group stands ahead of the professions as much as the professions stand above the manual vocations.

But there is more to the definition of a profession than this, as we shall see. It is best understood by first reviewing briefly the history of the development of the older professions of religion, law, and medicine. They established certain standards which later were adopted more or less by the professional world in general.

HISTORICAL EVOLUTION OF PROFESSIONS

There have been priests and practitioners of healing throughout recorded history and before. In primitive tribes the functions of the two were commonly combined. They remained combined, to a greater or lesser extent, long after the establishment of the universities of the western world in the eleventh and twelfth centuries. At that time the so-called vocational guilds emerged. Medieval craftsmen banded themselves together in these guilds to promote their crafts and special interests. In the same way and for similar purposes teachers and students formed associations. These teacher-student groups were not ecclesiastical in origin, but inasmuch as learning in those days was a monopoly of the church, the teachers generally were ecclesiastics and the groups so formed, which in fact gave rise to the medieval universities, inevitably were dominated by the church.[2] The subjects taught were theology, law, and physic (as medicine then was called) with theology so dominant that all the early students, even those in medicine and law, took the tonsure as clerks on their entrance to the university and later were advanced to minor or major clerical orders. Actually both maintenance and promotion in law and medicine in those days was by way of ecclesiastical prefer-

[1] Lecture to dietetic interns at St. Marys Hospital, January 19, 1950.

[2] For much of what I have to say about this subject I am indebted to Carr-Saunders and Wilson, the authors of a book which represents a study of professions. It was undertaken because of the growing interest of the public in the professions and because numerous practical problems relating to the organization of professions and to the availability of professional services had recently developed. Much study has been given to trade unions; this book, I believe, represents the only comparable study of professions. (Carr-Saunders, A. M., and Wilson, P. A.: The Professions. Oxford, England: Clarendon Press, 1933.)

ment. Men were supported to practice medicine by their status in the church. It must be remembered that almost all the administrative offices of the nations of the western world were then held by the clergy and that religion occupied a great part of the attention of all men of learning.

To a large degree, this state of affairs came to an end with the Reformation, and yet as late as the eighteenth century Joseph Addison, writing about professions, mentioned only three of them: divinity, law, and physic. His omissions are of interest. Architects under the leadership of Christopher Wren (1632–1723) were not recognized as a society with standards of competence and conduct before 1700. Likewise, by this time the fields of the surgeons and apothecaries were just beginning to emerge as professions from their former guilds. The Royal College of Surgeons was not established until 1800. In Addison's day none of these vocations was considered "fit for gentlemen." Teaching as a profession separate from theology also was omitted by Addison, but this was for the reason that almost all the educators, even up to that late date, were clergymen.

ORIGIN OF IDEALS OF THE PROFESSIONS

At the time when surgery was emerging, many other professions also were developing. This was brought about by the rapid growth of the natural sciences, and it took place by chance in a period when the idea of the "gentleman" held sway to such a great extent that the professions were constrained to conform to certain rules of conduct established by the aristocracy. Edmund Spenser, in his *Faerie Queen*, written in the sixteenth century, had said: "The gentleman by gentle deeds is known. For a man by nothing is so well bewrayed as by his manners." Thus the ideals and standards of conduct which we shall see are characteristic features of professions can be said to have developed from the early standards of the priest and from the later standards of the "gentleman."

From the priest came the spiritual conception that a profession was a *calling*, with an obligation to subordinate personal considerations to the interest of those served. From the idea of the gentleman came certain rules of conduct, such as that a professional person should not seek riches through the avenues of trade, and that he should not advertise or engage in several other practices that are commonly regarded as legitimate and ethical in the business world. The designation *honorable callings* is frequently applied to the professions; the "honorable" comes from the idea of the gentleman, the "calling" from the priesthood.

It is difficult today to draw a line which sharply separates the nonprofessional from the professional vocations. A borderline example is that of pharmacy. The apothecaries in England and Europe form a strict profession, but in this country the pharmacist, although licensed by the state, usually is the proprietor of a drugstore and is in business for little else than the profit he can make from trade. The pharmacy, indeed, has become a general store and ice cream parlor, but worse than that, many druggists are engaged in peddling patent medicines, an action which represents the widest possible departure from the obligations of the earlier professions.

I have said that the church and the idea of the gentleman were the origins of the idealism and standardization of conduct of the professions which emerged from the church in the period between the Renaissance and the eighteenth century, namely, medicine and law. Later professions, such as surgery, architecture, engineering, and accounting, were modeled to a great extent on medicine and law.

THE ENGLISH STUDY SOCIETIES

A third influence also should be recognized, namely, that of a group of study societies which arose, especially in England, in the eighteenth century. The dominating motive in their development was the desire for social intercourse among persons engaged in similar work and facing similar problems. These groups first took the shape of dining clubs where "shop" was talked, but it was only a short step from that to the holding of formal meetings for the reading and discussion of papers. The members of these clubs called themselves "civil engineers," "architects," and so on. The titles meant to them attainment of a degree of competence, but the public, unaware of this, accorded the same titles to whoever might lay claim to them whether the individual named was competent or not.

Because of this, the skilled practitioners came to desire that the competent should somehow be distinguished from those less competent, and out of this arose the professional associations of the early nineteenth century. The professional associations retained the study functions of the clubs, but they also set up standards for admission. These standards, when established, involved not only competence, but also through the influence of the older professions took cognizance of the honor and the conduct of the members. The associations gave attention, furthermore, to the material interests of their members and to public responsibilities which were involved or incurred.

THE PROFESSION OF DIETETICS

With this background, let us now review the features which are said to characterize professions, and let us see to what extent these features are apparent in the profession of dietetics.

Training

A prolonged and specialized intellectual training is involved. The training of dietitians is less pro-

longed than that required for the practitioner of medicine. On the other hand, it is every bit as long as, or even longer than, was demanded of the physicians of fifty or sixty years ago.

Technique

A technique is acquired in this course of training which makes possible a specialized service to society. This technique differs from that demanded by a craft or trade, in that it is developed from a basic field of inquiry or research in one or several of the academic disciplines. Furthermore, practitioners, to be able to apply their special skill with competence, must be well versed in these underlying disciplines. The training of dietitians covers fewer of the several natural sciences than does a course of medicine. On the other hand, the graduate in dietetics has gone more deeply into certain sciences than has the doctor of medicine. This second feature of professions thus is found in dietetics.

Personal Factor

A direct and personal relationship to clients is apparent in the classic professions. Their practitioners minister to individuals, and this creates a trusteeship with responsibility for the welfare of the client or the patient. From this, in turn, arises the obligation to serve when called upon, of which more later. Not all professions exhibit this feature. Those dealing with the public, rather than with individuals, show it least. The relationship of the therapeutic dietitian to patients is less intimate than that of the physician, but she recognizes that the closer this relationship can be made, the better will be the service she can render. All too few of us in any of the professions live so that man can say of us and our professions that the welfare of others has always been our first concern. Those who have so lived, however, have become the pride of their professions, and among such persons few can have surpassed Florence Nightingale in nursing, or my former close associate, Mary Foley, in dietetics.

Standards

A concern for competence and honor is a feature of the old professions. This involves concern not only for one's own competence and honor, but also for the standards set by one's profession. The motive is compelling and affects behavior. The attitude of the professional person to his client, or to his employer, is one of pride in service given, with opportunity for personal profit clearly subordinated to this pride in service. It is not without good reason that the phrase "professional pride" is in common use; it indicates a code of honor and behavior, based first on the need and interest of the client or patient, and second on the quality of the service one can give. When a man or woman enters an "honorable calling," he assumes the obligation of sustaining the honor of that calling. The fact that it is a "calling" equates the profession with the ministry, from which the ancient professions were derived, and imposes the obligation to subordinate personal considerations to the interest of the persons served. The fact that it is honorable equates the profession with the idea of the gentleman, involving certain rules of conduct and standards of competence.

"I hold," said Francis Bacon (1561–1626), "every man a debtor to his profession, from the which as men do of course seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and an ornament thereunto."

Accretions to Knowledge

The fifth and last feature characteristic of the professions is the existence of machinery further to advance the intellectual techniques involved. This has been accomplished by the formation of associations which serve as repositories of specialized knowledge and promote the extension of that knowledge by meetings for the reading and discussion of papers. The publication of journals devoted to the field also serves this purpose. The associations, furthermore, provide machinery for imposing tests of competence and enforcing observance of standards of conduct. In all of this the dietetic profession has followed conventional procedure. It has its American Dietetic Association with its meetings and its JOURNAL; it also has its standards of competence and honor.

Thus, all five of the features which characterize the older professions are found in the profession of dietetics. Lacking only is the recognition of the state. For medicine, nursing, and many other professions not only the profession itself but also the state has been concerned about the competence and honor of practitioners and has established procedure for examining and licensing practitioners. This has not been done for dietitians. However, that is not important from the present standpoint. The state has neglected other professions, such as journalism and architecture, and on the other hand the state has set up licensing procedure for a number of vocations, such as barbering, which make no claim to being professions.

So we can assert with little likelihood of contradiction that you young women are entering an honorable calling, that is, a profession with all the distinction which that may imply, but also with all the responsibility which appertains thereto. We might now ask what such responsibility involves.

THE ELEMENT OF ETHICS

With nearly all professions, and certainly with all of them which deserve the designation of an "honorable calling," we find associated a code of ethics expressive of professional ideals. Standards of conduct are higher in some professions than in others, and machinery for enforcement of the standards varies.

In any case, the standards usually are superior to those obtaining in the world at large. These standards are maintained to some extent by rules and regulations; to a much greater extent they depend for their observance on precedent and professional opinion. In other words, professional ethics represent an embodiment of ideals which are held quite independently of any machinery for enforcing them. Indeed, historically, as we have seen, the ideals preceded the writing of any rules or regulations. Medicine and law, emerging from the church, inherited from the church the spiritual conception of a calling. These older professions acquired their full stature, and the newer professions began to appear at a period when the conception of the gentleman was supreme, and from the gentlemen with whom their members were associated they absorbed additional ideals. Thus, the rules of conduct in professions, both written and unwritten, have come to cover offenses which range far beyond anything covered by the civil law. Such rules also have required loyalty to procedure developed for the maintenance of standards of competence. The rules are complicated, especially so because, as I have said, many of them remain unwritten. Admirable as they may be, it is little wonder that they frequently are misunderstood, particularly by the public. Public opinion is completely ignorant of the purposes of professional discipline, and usually it is critical of any disciplinary action taken by professional tribunals.

The Obligation of Service

A professional person is expected to observe certain obligations which arise out of the trust reposed in him. Among these is the obligation to serve whenever called upon, without discrimination because of economic, political, or personal considerations. In the medical profession this requirement is limited to emergencies or situations in which other practitioners are not available. The same I presume would apply to professions ancillary to medicine, such as nursing or dietetics. The obligation to serve is, however, generally recognized as pertaining to professions.

It raises an interesting question: namely, whether it is ethical for professional people to organize for collective bargaining. A strike obviously would be incompatible with the obligation to serve, and organizing for collective bargaining implies the right to strike. However, it may be questioned whether collective bargaining, in order to be effective, needs to carry with it the right to strike. Bargaining properly conducted in the open, if the case is strong, ultimately will succeed without recourse to any strike. Actually, strikes by professional persons have been conspicuous by their infrequency. An occasional teachers' strike has happened, but generally this has not been looked upon with favor, even by the teaching profession itself. On the other hand, the ancient profession of medicine has led the way in adopting collective bargaining when it was confronted by the panel system and later by socialization in England, and many other professional groups have followed that example. Actually, the British medical profession threatened to oppose the government by a strike when the controlled medical service now established there was first proposed. However, no strike occurred.

Remuneration

Remuneration in the professional world must be by fee or salary. You may not engage in trade or make a business out of a profession. The relationship between the professional person and his client or patient requires that the practitioner be financially disinterested in the advice he gives, or at least that the possibility of conflict between duty and self-interest be reduced to a minimum. This rule of conduct is maintained by architects, civil engineers, lawyers, physicians, and indeed, by almost all professions. The client or the employer has the right to know how much he is paying, for what he is paying, and to whom he is paying it.

For example, I am paid a salary by the Mayo Clinic, but write a book which is for sale to diabetic patients. I believe the interest of my patients can be promoted by their buying this book, but to tell them so would be awkward because they might think that my self-interest in the royalty from the book was the reason for my asking them to buy it. It was in order to avoid this embarrassment that I deeded to trustees my royalties from *A Primer for Diabetic Patients*. The same situation would arise were I to invent some instrument for injecting insulin painlessly, or some device for the rapid calculation of nutritive values of foods. I might honestly desire patients to procure these devices in their own interest, but in advising them to buy them, I would put myself under the suspicion of self-interest, which would be damaging to my honor and to the honor of my profession. By the current code of ethics a physician, although generally permitted to accept royalties for the books he writes, is not allowed to patent instruments or other inventions for his own advantage.

Fee-Splitting

An extreme expression of objection to commercial activity on the part of physicians is that of the Royal College of Physicians. The rule in England is that no fellow of the college shall be engaged in trade. Although this example is not generally followed, professional persons incline to regard profit seeking in other fields as being incompatible with a single-minded devotion to professional responsibility. Thoroughly condemned, here as well as in England, is a practice known as "splitting fees," whereby the practitioner recommending a patient to a consultant shares the fee paid to the latter, or whereby the consultant pays to the practitioner a percentage of

the fee or fees received by him. From this temptation dietitians, who are on a salary, are usually protected, but some are in private practice as consulting dietitians and to them the opportunity to split fees may present itself. It is an evil practice, difficult to prevent entirely in any of the professions.

Self-Aggrandizement

In the world of business, advertising is regarded as a perfectly legitimate competitive weapon. In the great majority of professions it is disapproved. It is held that professional persons may compete with one another only in their reputations for ability, which implies that advertising, price cutting, and similar practices are ruled out. In England practitioners of medicine who contribute articles to the lay press must make it a condition of publication that laudatory comments relating either to the contributor's professional status or to his experience shall not be permitted, and that his photograph or even his address shall not be published. We have not been quite so strict as this in America, especially in more recent years, but in principle we recognize the obligation to do whatever can be done to avoid publicity.

In England practitioners of medicine are enjoined by written rules against expression of opinion as to the merits of proprietary articles except under a guarantee, enforceable at law, that their statements are not to be published for purposes of advertising. I believe the injunction applies whether or not the practitioner is paid for his opinion or has anything to gain from the sale of the article in question. The same applies in America, although here the law remains unwritten.

Confidential Matters

A priest may not betray to any living soul any information obtained in the confessional. Similarly, the practitioner of medicine is honor bound sacredly to guard information which relates to the physical condition or peace of mind of patients. The obligation is over and above the requirements of the law, although the law has recognized and respects professional confidence under so-called privileged communications. The rule applies as well to the professions of nursing and dietetics, and great care should be exercised, especially in institutions, that histories and other records containing information about patients do not fall into unauthorized hands. Likewise, no such confidential information is a proper subject for any gossip or loose talk.

THE IMPERATIVE OF STUDY

I must comment further on one more characteristic of professions and especially of the medical profession. This deserves your close consideration. It applies to study. It is not enough to serve. Together with the obligation to serve there is general recognition among professional persons of an obligation to give only the *best* service possible.

Study, as I have mentioned, is of the essence of professionalism. The desire to study and to advance the intellectual techniques which they shared in common was the reason professional persons formed associations. The study clubs, as I have told you, which gave birth to the younger professions and the older professions, evolving as they did from the student-teacher guilds of the Middle Ages, were based on study. Furthermore, the fact that concern regarding competence is one of the characteristics of professions implies that the individual in a profession is honor bound to keep abreast of the growing knowledge of his particular technique. This means continuous study and involves attendance at such meetings of his and other related associations as can contribute to his competence. It means regular reading, not only in the journals of his association, but in journals of related disciplines.

You become debtors to your profession if you enter one, and as Sir Francis Bacon said, are duty bound to endeavor to make yourselves a help and ornament thereunto. The lazy, the self-indulgent and the selfish man or woman is out of place in a profession. Professions rarely derive benefit and frequently are injured by such members. I have emphasized that professional rules of conduct depend for enforcement on professional opinion rather than on mandates. This means, of course, that unless the personal standards of the large majority of the members of a profession are high, the standards of the profession as a whole will be lower than they ought to be.

THE APPRENTICE

Another point worth noting before we bring this discussion to a close relates to the place of the apprentice in professions. In medicine we call them "interns." A student leaves the university with or without a degree, but in any case he requires additional experience before he qualifies for licensing by the state or for admission to the professional association. The same is true in dietetics. The dietetic internship represents a period of twelve months in an accredited hospital, with the candidate under continuous and expert supervision.

With the internship, although her work is supervised by experienced practitioners, the dietetic intern begins to engage in practice. Her status is like that of an apprentice in a manual skill, and like the apprentice she must *serve* as well as *learn*. Up to the time of this internship she has been on the receiving end of the intellectual heritage of the profession, but in the internship she learns to give.

I have emphasized that the members of professions must continue to be learners all their lives, to keep abreast of advances in their field, in order to be able to provide the best possible service to their clients.

So, too, the dietetic intern must strive to increase her knowledge and her skill at the same time that she is giving service. The transition from the student status is difficult for some young people. The student while in school is the person of supreme importance. All courses are designed for his or her advantage. In the internship the student's status is changed by the intrusion of another person into the center of the stage. The patient is the all-engaging object of attention, and everyone is called upon to subordinate personal interests to the welfare of the patient. This may irk the intern a bit at first, but it is something to remember. If you will make yourself an asset to your profession you must begin without delay to subordinate yourselves to the interests of your patients. This obligation is inherent in the concept of a "calling," and basically, as I have told you, a profession is a "calling."

CONCLUSION

I recently listened to the governor of this state, Governor Luther F. Youngdahl, who as you know has been leading a movement to improve the care given in the state hospitals for the mentally ill. He has accomplished much already, although as he stated, much still remains to be done. He was talking to the employees of those institutions, from the superintendents down, and his major emphasis was placed on the attitude of each of them to the patients. Here were poor unfortunates whom it was their privilege to serve—but their service to be effective must spring from love. They must follow the Master's orders, all of them; they must love their fellowmen, "even the least of these my brethren" as our Lord admonished us. How much more will we be lacking, we who have such abundant opportunities for giving loving service because of our profession, if we fail to obey this admonition. Will we not be like the servant in the parable of the talents who declined to risk his talent, or like those in the story of the Last Judgment who were deaf and blind to the needs of those around them?

Our service to our patients must be loving service, for only "he that loveth another," as Saint Paul admonished the Romans, "hath fulfilled the law."

Food Problems in Rural Georgia

The following letter is published because it is so expressive of the problems encountered and the situations which must be met if the nutrition of people in the rural South is to be improved. It was originally sent to a nutritionist who was traveling in the rural areas of Georgia attempting to inform many families of limited means how they may improve their diets. It was forwarded to the JOURNAL by Lendal H. Kotschevar, Food and Equipment Technologist at the U.S. Naval Supply Research and Development Facility, Bayonne, New Jersey.

Dear Miss ——:

I am a lady at Reedy Creek with a fambly size 12 of us. Necks time you come do talk some on hog meat.

I was marited the 5 day of June in 1922 and since my husbin has just provited us the best he could. But ther is few days we don't eat nothing but fat back and bred and it is true I dont complain since as I said my husbin caint get ahead to no better doings try as he will. Yet is would hurt him it he nowed I had wrote you about this so I will not give my name yet. I will say Just to you that I have et fat back til I am sick of it. I have fried it plane, fried it skinned, fried it in meal, bolled with collads, bolled it with corn meal duplins and baked in bred and evvy other way you can skin a cat. I even onct made a pie but it turned out bad. My husbin said it wont fitten for a dog to eat.

Now I see it is not good to eat fat back all the time as none of us is so helthy now as we onct was. So I do wisht the good Lord would leave not a pig aliv of no sort in all the land.

I have run out of ways to fix it. You are kind and edicatered so Miss —— tell some new ways to fix it necks time. Just tell it and if you dont know me I will be lisning close beleve you. We like you talks a lot on feeding the fambly but it is far worse nor getting ahold of feed then of balansing it. You Just dont know. I hope you will not forget.

Mrs. Plank
this is not my name only I put in place of it

See You at Convention

Your friends will be traveling along all of the air and land routes to Washington in October for the A.D.A. convention. True, they are going primarily for professional reasons, but they have another purely human reason—they want to have a visit with one another and with you.

Afterward, they will return to Maine and Florida and Idaho, exhilarated by all they have gained professionally, and, as important, content to let the year take its normal course because they have the comfortable glow of renewed friendship.

Effect of Various Types of Breakfasts on Physiologic Response[1]

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ALTHOUGH it is generally recognized that an adequate morning meal is an asset to both physical and mental performance, there is considerable information yet to be obtained before an "adequate" breakfast can be well defined. Recently, Tuttle, Daum, and co-workers (1, 2) have presented evidence that the omission of breakfast adversely affects the morning performance of both men and women. Haldi and Wynn (3) could demonstrate no beneficial effects as a result of feeding factory workers in mid-morning, regardless of the quantity and composition of the food provided. Orent-Keiles and Hallman (4) conducted a study on the effect of various quantities and compositions of breakfasts on the blood sugar level. They reported: "After breakfasts that provided 22 gm. of protein derived chiefly from milk and eggs and about 500 calories, the postprandial rise in blood sugar was normal, but the average maximal figure was lower and the return to fasting level delayed beyond that characteristic of the isocaloric breakfasts of lower protein content. A sense of well being was consistently reported following breakfasts that provided the larger quantities of protein-rich foods." They also made the general observation: "With meals providing between 500 and 750 calories, sustained blood-sugar levels and a sense of well-being seems to be more related to the quantity and quality of the protein in the meal than to the carbohydrate or fat content." The study reported here has to do with the effect of various sizes and types of breakfasts on physiologic response.

The physiologic responses used as a basis for comparing the various breakfasts were as follows: (a) neuromuscular tremor, (b) maximum work output, and (c) choice reaction time.

The breakfasts compared were as follows: (a) heavy breakfast vs. light breakfast, (b) basic breakfast vs. no breakfast, (c) no breakfast vs. black coffee only, and (d) black coffee only vs. basic breakfast with coffee.

[1] This work was generously supported by a research grant from the Cereal Institute, Inc., Chicago. Received for publication February 28, 1950.

Experimental Procedure

TECHNIQUES FOR MEASURING PHYSIOLOGIC RESPONSES

The techniques employed for measuring maximum work output, choice reaction time, and neuromuscular tremor have been previously discussed (1).

SUBJECTS

The subjects were ten university women varying in age from eighteen to twenty-five years. They lived as a group in a university cottage, supervised by a proctor appointed by the university.

As will be seen in the tables, a part of the experiment involved only nine subjects because one of the group was forced to drop out due to unforeseen circumstances.

THE BREAKFASTS

In Table 1 are given the patterns for the heavy, light, and basic breakfasts used in this investigation. During the period when the subjects ate the basic breakfast plus coffee, their breakfast consisted of the breakfast given in the Table 1 plus 1 cup (6 oz.) black coffee. The period called "black coffee only" was characterized by "breakfasts" consisting of only 1 cup coffee with neither cream nor sugar. The "no breakfast" period indicates that no food was eaten between 8 P.M. and 12 noon on the following day.

DESIGN OF THE INVESTIGATION

The investigation was designed to show the maximum effects of alterations in breakfast habits on the physiologic responses measured. Breakfast, or coffee, as prescribed, was taken between 7 and 8 A.M. The breakfasts were prepared by the Department of Nutrition at the State University of Iowa Hospital and were served in the hospital dining room under the supervision of dietitians. Meals other than breakfast were not controlled. The data were collected between 10:30 A.M. and 12 noon. Each subject was tested twice each week, always at the same hour.

TABLE 1

Breakfast pattern used in this investigation

ITEM	HEAVY BREAKFAST	LIGHT BREAKFAST	BASIC BREAKFAST
	gm.	*gm.*	*gm.*
Bacon (2 slices)	20	—	—
Bread, enriched white (toasted)	60	30	60
Butter	16	8	8
Cereal	30		30
Cream	60		
Egg (one)	50		
Fruit	100	100	100
Jelly	20		
Milk			
Skim fluid		240	
Whole fluid	240		360
Sugar	10		5
Calories	1000	300	600
Protein (gm.)	30	10	20

The experimental procedure was arranged so that each test had little if any effect on the succeeding one. This required that the sequence be: (a) choice reaction time, (b) neuromuscular tremor, and (c) maximum work output.

Although it is recognized that there must have been uncontrolled factors in the behavior of the subjects, these were minimized since the routine of the subjects was limited somewhat by their academic requirements.

Results

EFFECT OF ALTERED BREAKFAST HABITS ON NEUROMUSCULAR TREMOR

Heavy Breakfast vs. Light Breakfast

The procedure in this experiment was to divide the group of ten subjects into two sub-groups of five each. The experiments lasted for a period of ten weeks. During the first five weeks all subjects ate the heavy breakfast. During the remaining five weeks half of the subjects continued to eat the heavy breakfast while the other half were given the light breakfast.

The magnitude of the neuromuscular tremor for both groups during the two periods is compared in Table 2. The data show that changing from a heavy to a light breakfast did not significantly alter the tremor magnitude of any subject. The data also show that in the group which ate the heavy breakfast during the entire ten weeks, the tremor magnitude of three subjects remained unchanged, while in two cases it became significantly greater during the second period. On the basis of averages of all data for all subjects, there was no significant change in tremor magnitude during any phase of the experiment.

TABLE 2

Comparison of neuromuscular tremor for subjects when they ate a heavy breakfast and when they ate a light breakfast

BREAKFAST REGIMEN	NEUROMUSCULAR TREMOR					
Group 1—Experimental Subjects						
	Subject 1	*Subject 2*	*Subject 3*	*Subject 4*	*Subject 5*	*Average*
Period 1—heavy breakfast						
Mean (sq. cm.)	2.49	3.71	2.26	2.95	2.44	2.77
Standard deviation	0.62	1.50	0.92	1.63	0.86	0.52
Period 2—light breakfast						
Mean (sq. cm.)	2.64	3.63	2.85	4.07	2.82	3.20
Standard deviation	0.53	1.47	0.88	1.60	1.07	0.55
t value (Period 1 vs. Period 2)	0.588	0.114	1.392	1.475	0.831	1.138
Significance level	60%	—	20%	20%	50%	30%
Group 2—Control Subjects						
	Subject 6	*Subject 7*	*Subject 8*	*Subject 9*	*Subject 10*	*Average*
Period 1—heavy breakfast						
Mean (sq. cm.)	3.90	4.61	3.17	2.98	2.40	3.41
Standard deviation	1.35	1.70	1.03	1.40	0.87	0.77
Period 2—heavy breakfast						
Mean (sq. cm.)	4.06	7.08	4.66	2.94	2.67	4.28
Standard deviation	1.46	1.47	1.54	1.19	0.73	1.57
t value (Period 1 vs. Period 2)	0.242	3.298	2.413	0.065	0.713	0.993
Significance level	90%	1%	5%	—	50%	40%

Basic Breakfast vs. No Breakfast

Since by this time all subjects were well trained in the techniques and had established their response pattern fairly well, a control group was not included in this or succeeding experiments. The plan of the study was to have all subjects eat the basic breakfast for five weeks and omit breakfast during the five-week period which immediately followed.

The magnitude of the neuromuscular tremor for the two periods is compared in Table 3. The tremor magnitude was significantly greater in every case during the period of no breakfast.

No Breakfast vs. Black Coffee Only

During the five-week period immediately following the no breakfast period, all subjects omitted breakfast except for one cup of black coffee. The neuromuscular tremor magnitudes for the two periods are compared in Table 3. In every case the tremor magnitude was increased significantly by the coffee.

Black Coffee Only vs. Basic Breakfast plus Coffee

Immediately following the five-week period during which coffee was substituted for no breakfast, all subjects ate the basic breakfast including one cup of coffee, for a period of five weeks. The tremor data for these two periods are shown in Table 3.

The tremor magnitude was significantly less in six cases during the basic breakfast period while in three cases it tended to be less, but was not significantly so. It should be pointed out here that no coffee was allowed in the first basic breakfast period while in this experiment one cup was included.

EFFECT OF ALTERED BREAKFAST HABITS ON MAXIMUM WORK OUTPUT

Heavy Breakfast vs. Light Breakfast

Due to mechanical failure of the apparatus and inability to make prompt repairs, the maximum work output was not measured in this experiment.

Basic Breakfast vs. No Breakfast

The data were collected according to the same plan described for the experiment comparing neuromuscular tremor. Data were collected twice each week from all subjects for a period of five weeks during which time they were eating the basic breakfast. Immediately following this period, all subjects omitted breakfast for five weeks. Here again, two records of maximum work output were made by each subject each week.

The maximum work accomplished by the subjects under the two breakfast conditions is compared in Table 4. The data show that in every case the maximum work output was greater during the basic breakfast period than when breakfast was omitted. In two cases, however, the difference was not significant.

No Breakfast vs. Black Coffee Only

Immediately following the no breakfast period, the subjects substituted one cup of black coffee for no breakfast for a period of five weeks. The maximum work output for the "no breakfast" period and the "coffee only" period is compared in Table 4. All subjects did less work during the coffee period, but in only four cases was the decrease significant.

TABLE 3

Neuromuscular tremor of subjects during three periods in which they were on different breakfast regimens

BREAKFAST REGIMEN	NEUROMUSCULAR TREMOR									
	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	Subject 7	Subject 8	Subject 9	Subject 10
Period 3										
Basic breakfast										
Mean (sq. cm.)	1.7	2.0	1.5	1.5	1.8	1.5	2.0	1.8	1.6	1.6
Standard deviation	0.59	0.73	0.34	0.24	0.23	0.20	0.60	0.47	0.22	0.43
Period 4										
No breakfast										
Mean (sq. cm.)	2.6	3.0	2.9	3.1	2.8	2.9	3.0	3.4	3.0	3.4
Standard deviation	0.60	0.70	0.92	0.81	0.50	1.00	0.52	0.75	0.67	0.90
t value (Period 3 vs. Period 4)	3.19	2.97	4.27	3.59	4.28	4.09	3.79	5.44	5.97	6.51
Significance level	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Period 5										
Black coffee										
Mean (sq. cm.)	4.5	5.6	4.1	4.7	5.4	5.5	6.1	5.8	5.8	
Standard deviation	0.97	0.91	0.86	0.84	0.95	1.59	1.27	1.75	1.75	
t value (Period 4 vs. Period 5)	5.000	6.974	2.859	4.113	7.267	4.153	6.77	3.782	6.061	
Significance level	1%	1%	2%	1%	1%	1%	1%	1%	1%	
Period 6										
Basic breakfast plus black coffee										
Mean (sq. cm.)	3.9	3.9	3.8	4.2	4.2	4.1	4.1	4.2	3.0	
Standard deviation	1.05	0.59	0.91	1.07	0.55	0.69	0.67	1.08	0.54	
t value (Period 5 vs. Period 6)	1.261	4.696	0.718	1.101	3.243	2.418	4.189	2.332	3.534	
Significance level	30%	1%	50%	30%	1%	5%	1%	5%	1%	

TABLE 4

Maximum work output of subjects during four periods in which they were on different breakfast regimens

BREAKFAST REGIMEN	MAXIMUM WORK OUTPUT									
	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	Subject 7	Subject 8	Subject 9	Subject 10
Period 3										
Basic breakfast										
Mean (kg.m.)	2094	1659	1750	1914	1994	1392	2207	2414	1839	1679
Standard deviation	90.8	100.1	131.0	140.7	54.9	126.4	256.2	144.2	73.8	161.4
Period 4										
No breakfast										
Mean (kg.m.)	1826	1619	1507	1670	1779	1245	2101	1828	1664	1538
Standard deviation	157.6	66.3	86.4	116.9	210.0	76.4	173.9	144.3	27.7	122.2
t value (Period 3 vs. Period 4)	4.42	1.00	4.65	4.00	2.30	2.99	1.03	8.62	6.66	2.18
Significance level	1%	40%	1%	1%	5%	1%	40%	1%	1%	5%
Period 5										
Black coffee only										
Mean (kg.m.)	1708	1555	1499	1547	1544	1230	2007	1693	1577	
Standard deviation	188.6	124.1	118.2	139.1	102.0	80.1	167.5	167.7	91.5	
t value (Period 4 vs. Period 5)	4.56	1.37	0.164	2.03	3.02	0.407	1.17	1.83	2.73	
Significance level	1%	20%	90%	5%	1%	70%	30%	10%	2%	
Period 6										
Basic breakfast plus black coffee										
Mean (kg.m.)	1937	1827	1815	1955	1938	1424	2321	2033	2090	
Standard deviation	386.4	212.3	193.6	200.7	248.5	126.4	181.4	288.3	194.6	
t value (Period 5 vs. Period 6)	1.598	3.318	4.179	5.012	4.400	3.889	3.815	3.058	7.156	
Significance level	20%	1%	1%	1%	1%	1%	1%	1%	1%	

Black Coffee Only vs. Basic Breakfast plus Coffee

During the five weeks immediately following the "coffee only" period, all subjects ate the basic breakfast plus one cup of coffee. The maximum work output accomplished during the two periods is compared in Table 4. The data show that in all cases except one, the subjects did significantly more work when eating the basic breakfast with coffee than when they had coffee only.

EFFECT OF ALTERED BREAKFAST HABITS ON CHOICE REACTION TIME

Heavy Breakfast vs. Light Breakfast

The procedure in this experiment is the same as that followed in the other experiments involving heavy and light breakfasts. A control group of five subjects ate the heavy breakfast for two five-week periods while an experimental group ate the heavy breakfast for five weeks and the light breakfast for five weeks.

The choice reaction time for both groups for the two periods are shown in Table 5. The data show that when the group changed from a heavy to a light breakfast three subjects had a shorter choice reaction time while two showed no change. When the data on reaction time of the subjects who ate the heavy breakfast for both five-week periods were compared, it was found that the reaction time of four of the subjects was shorter during the second period while one showed no change. It is believed that the decrease in reaction time exhibited by both groups is due to practice and learning, because this was the first experience these subjects had had with this type of experiment. Since both groups behaved essentially alike, the data are interpreted as indicating that changing from a heavy to a light breakfast was not an influencing factor in reaction time.

Basic Breakfast vs. No Breakfast

The procedure in this experiment was to compare the choice reaction time of the subjects used in the previous experiment during a five-week period of basic breakfast with those obtained from the same subjects during a five-week period of no breakfast. The data are compared in Table 6.

The data show that in four cases there was no

TABLE 5

Comparison of choice reaction time for subjects when they ate a heavy breakfast and when they ate a light breakfast

BREAKFAST REGIMEN	CHOICE REACTION TIME					
Group 1—Experimental Subjects						
	Subject 1	*Subject 2*	*Subject 3*	*Subject 4*	*Subject 5*	*Average*
Period 1—heavy breakfast						
Mean (seconds)	0.295	0.314	0.272	0.331	0.327	0.308
Standard deviation	0.0134	0.0230	0.0115	0.0202	0.0227	0.0219
Period 2—light breakfast						
Mean (seconds)	0.273	0.282	0.274	0.304	0.329	0.292
Standard devaiation	0.0116	0.0193	0.0164	0.0176	0.0224	0.0214
t value (Period 1 vs. Period 2)	3.729	3.200	0.300	3.024	0.189	1.046
Significance level	1%	1%	80%	1%	90%	20%
Group 2—Control Subjects						
	Subject 6	*Subject 7*	*Subject 8*	*Subject 9*	*Subject 10*	
Period 1—heavy breakfast						
Mean (seconds)	0.260	0.360	0.327	0.363	0.354	0.333
Standard deviation	0.0088	0.0146	0.0128	0.0434	0.0339	0.0386
Period 2—heavy breakfast						
Mean (seconds)	0.248	0.348	0.280	0.326	0.317	0.304
Standard deviation	0.0094	0.0189	0.0324	0.0114	0.0261	0.0355
t value (Period 1 vs. Period 2)	2.791	1.506	4.052	2.477	2.593	0.580
Significance level	2%	20%	1%	5%	2%	60%

TABLE 6

Choice reaction time of subjects during four periods in which they were on different breakfast regimens

BREAKFAST REGIMEN	CHOICE REACTION TIME									
	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	Subject 7	Subject 8	Subject 9	Subject 10
Period 3										
Basic breakfast										
Mean (seconds)	.288	.301	.291	.320	.345	.273	.373	.280	.326	.298
Standard deviation	.0065	.0175	.0132	.0122	.0138	.0104	.0118	.0157	.0121	.0147
Period 4										
No breakfast										
Mean (seconds)	.269	.262	.266	.294	.336	.258	.340	.274	.313	.285
Standard deviation	.0122	.0134	.0109	.0235	.0127	.0149	.0180	.0132	.0225	.0167
t value (Period 3 vs. Period 4)	4.12	5.13	4.24	2.94	1.22	2.47	4.60	.87	1.52	1.75
Significance level	1%	1%	1%	1%	30%	5%	1%	40%	20%	10%
Period 5										
Black coffee only										
Mean (seconds)	.289	.275	.280	.309	.354	.279	.334	.263	.297	
Standard deviation	.0252	.0269	.0258	.0279	.0207	.0213	.0213	.0205	.0217	
t value (Period 4 vs. Period 5)	2.141	1.238	2.528	1.203	2.135	2.314	.646	.000	1.538	
Significance level	5%	30%	5%	30%	5%	5%	60%	—	20%	
Period 6										
Basic breakfast plus black coffee										
Mean (seconds)	.235	.230	.239	.262	.302	.231	.292	.244	.270	
Standard deviation	.0148	.0082	.0148	.0150	.0123	.0106	.0164	.0144	.0055	
t value (Period 5 vs. Period 6)	5.544	4.795	5.166	4.386	6.500	5.937	4.688	3.525	3.614	
Significance level	1%	1%	1%	1%	1%	1%	1%	1%	1%	

significant difference in the reaction time for the two periods. For the remaining six, the choice reaction time was significantly shorter during the no breakfast period. These results are partially in conflict with previous findings of Tuttle *et al.* (1) in a similar experiment when it was found that the choice reaction time of three of five subjects was not significantly different when a heavy breakfast was replaced by no breakfast. However, the remaining two subjects had a significantly faster choice reaction time when they ate the heavy breakfast than when they omitted breakfast.

No Breakfast vs. Black Coffee Only

Nine subjects were used in this experiment. During the five weeks following the no breakfast period, the subjects drank one cup of black coffee at breakfast time. The choice reaction times for the two periods are compared in Table 6. The data show that in five cases there was no significant difference in reaction time for the periods compared. In four cases the reaction time was significantly longer during the coffee period.

Black Coffee Only vs. Basic Breakfast plus Coffee

A comparison of the choice reaction time of the subjects on coffee only with their reaction time for the succeeding five weeks when they ate in addition the basic breakfast is shown in Table 6. The data show that in every case the choice reaction time was significantly shorter with the basic breakfast.

EFFECT OF ALTERED BREAKFAST HABITS ON BODY WEIGHT

During the course of Periods 3, 4, 5, and 6 body weight was recorded weekly. In Table 7 are shown the body weight changes for all subjects during each of these periods. The data show that during the first basic breakfast period five subjects gained weight, two lost, and one remained unchanged (a fluctuation of less than 1 lb. is regarded as no change). During the no breakfast period, two subjects gained, four lost, and three remained unchanged. During the black coffee only period, two gained, three lost, and four did not change. During the basic breakfast period plus coffee, one subject gained weight, three lost, and five remained unchanged. Over the whole experimental period, five subjects lost weight, the greatest loss being 6 lb. 4 oz. Three subjects gained weight over the experimental period, the maximum gain being 3 lb. 2 oz. One subject maintained the same weight throughout the experiment.

One factor to be taken into account in the interpretation of the data on body weight is that Subjects *1*, *2*, and *4* were under the impression that they were too heavy and made special effort to lose weight. Subject *9* felt that she should weigh more and thus made special effort to gain weight. Alteration of breakfast habits apparently had no effect on body weight since the subjects were free to compensate by controlling their food intake during the other meals.

Contrary to the observations of Orent-Keiles and Hallman (4), the amount of protein in the breakfasts used in this experiment did not affect the subjective impression of our subjects relative to their feeling of well-being.

Conclusions

On the basis of data gathered from a group of ten women relative to the effects of altered breakfast habits on physiologic response, the following conclusions are justified:

No differentiation by way of tremor magnitude or choice reaction time could be established following the regular consumption of 1000-calorie and 300-calorie breakfasts composed of ordinary breakfast items.

In comparison with regular omission of breakfast, the regular consumption of a 600-calorie breakfast consisting of fruit, breakfast cereal, milk, sugar, toast, and butter was found to result in a significant reduction of tremor magnitude in all cases and an increase in choice reaction time in 60 per cent of the

TABLE 7

Comparison of body weights of subjects during four periods with different breakfast regimens

BREAKFAST REGIMEN	BODY WEIGHT								
	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	Subject 7	Subject 8	Subject 9
Period 1—basic breakfast									
Start	150 lb. 5 oz.	144 lb. 8 oz.	120 lb. 6 oz.	149 lb. 12 oz.	—	118 lb. 12 oz.	138 lb. 6 oz.	149 lb. 14 oz.	111 lb. 13 oz.
End	148 lb. 12 oz.	143 lb. 10 oz.	122 lb. 2 oz.	148 lb. 4 oz.	125 lb. 7 oz.	120 lb. 8 oz.	139 lb. 7 oz.	152 lb. 4 oz.	115 lb. 12 oz.
Period 4—no breakfast									
Start	149 lb.	142 lb. 12 oz.	120 lb. 6 oz.	145 lb. 14 oz.	125 lb.	120 lb. 2 oz.	135 lb. 14 oz.	149 lb. 12 oz.	114 lb. 14 oz.
End	147 lb. 14 oz.	141 lb.	119 lb. 3 oz.	144 lb. 2 oz.	125 lb. 1 oz.	120 lb. 8 oz.	137 lb. 11 oz.	152 lb. 2 oz.	113 lb. 15 oz.
Period 5—black coffee only									
Start	147 lb. 11 oz.	142 lb. 6 oz.	119 lb. 7 oz.	143 lb. 2 oz.	125 lb. 5 oz.	120 lb. 8 oz.	138 lb. 8 oz.	152 lb.	115 lb. 5 oz.
End	148 lb. 6 oz.	141 lb. 4 oz.	119 lb. 4 oz.	144 lb. 8 oz.	125 lb.	124 lb. 4 oz.	135 lb. 12 oz.	151 lb. 2 oz.	114 lb. 5 oz.
Period 6—basic breakfast plus black coffee									
Start	146 lb. 6 oz.	142 lb.	119 lb. 2 oz.	144 lb.	125 lb. 3 oz.	124 lb.	138 lb. 12 oz.	150 lb. 6 oz.	115 lb. 13 oz.
End	146 lb. 10 oz.	140 lb.	118 lb. 11 oz.	143 lb. 8 oz.	124 lb. 8 oz.	121 lb. 3 oz.	136 lb. 5 oz.	153 lb.	115 lb. 8 oz.

cases. The data showed an increase in maximum work output in 80 per cent of the cases during the period when food was consumed at breakfast time.

In comparison with regular omission of all food and beverages at breakfast time, a cup of black coffee without addition of sugar was observed in late morning hours to increase tremor magnitude significantly in every case, and both to decrease maximum work output and to increase choice reaction time in 45 per cent of the cases.

As compared with the regular consumption of a 600-calorie breakfast of fruit, breakfast cereal, milk, sugar, toast, and butter, with which a cup of black coffee was included, the regular consumption of a cup of black coffee only at breakfast time resulted in a significant increase in tremor magnitude in 67 per cent of the cases, a significant increase in reaction time in all cases, and a decrease in maximum work output in 89 per cent of the cases.

Altered breakfast habits including regular omission of breakfast, consumption of black coffee only, consumption of 300-, 1000-, and 600-calorie breakfasts (the last consumed with or without coffee) along with free choice of kinds and quantity of foods consumed at other meals were not associated with any consistent alterations in body weights of young women eighteen to twenty-five years of age.

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Food in a Mental Health Hospital

Let us use our imagination a little. Can you see us walking along a path through a hedge taking a short cut home? It's a clear, sunny November afternoon; the trees are silhouetted against the sky, and a sharp, biting breeze hurries us into a warm kitchen. Do you catch a whiff of that fresh, clean smell of baking? The clock ticks loudly, the rocking chair is in the corner of the old-fashioned kitchen, and the green tomatoes are ripening on the window ledge —all cheerful notes. A peek into the old-style pantry (with its glassed-in shelves on one side and open shelves holding spices and staples on the other) shows six plump brown-crusted loaves of bread on a white, cloth-covered bread board, a sugar-topped coffee cake, and pecan rolls with the nuts slithering off in the sirup. You have a pleasant sense of anticipation. You're a guest for a countryman's traditional Saturday supper of pork and beans. As we sit around the family table, a platter holding the steaming golden brown beans gives a flavorful aroma that tickles our noses and makes our mouths water. There is laughter and gaiety and good-natured joshing. We talk over the Charleston, bell-bottomed trousers, model T's, ukeleles, and the new cloche-style hats—way back there in the Flapper age.

This bubble picture is given only to illustrate a cup of warmth and security, and a sense of the buoyancy of life, the joy of living.

Now we are dietitians and we're walking along another road. Is this a campus we're approaching? The beautiful shrubbery, the landscaping, and the many buildings give that effect. But instead of hurrying groups of students, there are patients out to enjoy the afternoon sun. We enter the state institution through the kitchen door, and there is a variety of odors. The menu here, too, is baked beans for supper for the ambulatory patients. And as we enter the huge dining room which seats over six hundred people, the shuffling patients are directed along a make-shift cafeteria counter. There each one receives a plate of food, and then is directed to his place where he finds silver, dessert, bread and butter, and pitchers of black coffee.

It's a popular notion that a mental patient doesn't know what's going on about him, but the fact is that distorted ideas do not influence the enjoyment of daily living comforts. A smile, a pleasant voice, kindly tolerance, added to cleanliness, warmth, and good food make any one happy, and certainly are stimuli to the mentally ill. To enjoy a good meal is that much time out from a world of nightmares. The overall objective of mental health therapy is to bring about more frequent and longer periods of normal behavior until the good pattern is firmly established and continuous. Thus the patient is through both the serious phase of his illness and his convalescence. Food is a pleasant tool to help all of us get enjoyment from living. And human nature being what it is, we enjoy food that's delicious as well as nutritious. This, then, is the role of the dietitian in a mental hospital—to serve delicious, nutrious food in pleasant surroundings.—*Excerpted from a talk by Ethel Heaberlin given before the Minnesota Dietetic Association on November 12, 1949 in St. Paul.*

Food Preparation at High Altitudes[1]

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EVER since the early pioneers pushed their way westward into the Rocky Mountain region, the women of families settling here have encountered food preparation problems characteristic of the higher elevations. They discovered at once that it took much longer to cook such staple articles as potatoes and beans; and to their dismay, many of their favorite cake recipes which they had brought with them were dismal failures.

Even today, homemakers who come to Colorado or other mountainous regions from parts of the country near sea level find themselves perplexed by the problems of altitude cookery. The Colorado Agricultural Experiment Station receives hundreds of requests every year for help with these problems, not only from within the United States but from as widely separated places as the Belgian Congo with altitudes as high as 7000 ft. and LaPaz, Bolivia, which is 12,000 ft. high.

The difference in atmospheric pressure is the cause of these difficulties. Just as the pressure of water is greatest at the bottom of the sea and becomes lighter nearer its surface, so it is in the "sea of atmosphere" in which we live: the pressure of the air is greatest at sea level and becomes less as we go up. The atmospheric pressure at sea level is 14.7 lb. per square inch; it is usually read on a barometer and expressed in terms of the height of a column of mercury which the atmosphere is capable of supporting, which at sea level is 760 mm. As the altitude increases, the pressure drops. It is approximately 12.2. lb. per square inch, or 635 mm. of mercury at 5000 ft., and 10.2 lb. per square inch, or 531 mm. of mercury at 10,000 ft. The atmospheric pressure varies somewhat from day to day because of weather conditions, but this variation is usually within a range of 30 mm. of mercury.

The decrease in atmospheric pressure due to altitude is the basic cause of problems which arise in preparing food. These problems become of greater importance as the altitude increases. The change is so small that no difficulty is usually encountered up to elevations of 3000 ft. But since about one-third of the area of the United States is higher than 3000 ft. the problem of high altitude cookery is pertinent for a great many people.

The work on high altitude cookery which has been carried on at the Colorado Station for the past twenty years has been done in an altitude chamber, which is one of the few of its kind in the country (1). It consists of a steel cylinder 7 ft. in diameter, equipped with a thermostatically controlled oven and all the necessary mixing equipment. The pressure inside the chamber can be changed to give pressures corresponding to those from sea level to over 10,000 ft. The ventilation is adjusted to furnish adequate fresh air to the occupants, and the temperature is controlled by cooling or heating the in-going air as required. In this way we can climb to 10,000 ft. merely by stepping into the cylinder, closing the door, and signalling to the operator to start the machinery. When the work is finished, the operator gradually lets the pressure rise, and we come back to 5000 ft. (the Fort Collins altitude).

There are two types of problems in food preparation caused by altitude: leavening and boiling. In addition, the rate of evaporation of moisture from foods is faster for a given temperature and humidity than at lower elevations.

LEAVENING

The most perplexing problem that confronts a homemaker at high altitudes is that of baked products, especially cake. Since the air pressure is less, the leavening gas expands more and causes a coarse, crumbly, or sometimes fallen product. A correspondingly smaller weight of carbon dioxide or other leavening gas is required to perform the same amount of leavening as the pressure decreases. This applies to all flour mixtures, whether they are leavened with carbon dioxide, as in the case of butter cakes, baking powder biscuits, muffins, quick breads, and yeast breads; or with air as in angel food and sponge cakes; or with steam, as in popovers and cream puffs.

[1] Colorado Agricultural Experiment Station Scientific Journal Series No. 314. Presented at the 32nd Annual Meeting of the American Dietetic Association in Denver, on October 12, 1949.

The structure of cake is very delicate, and increased pressure resulting from expanded carbon dioxide within the cells causes them to expand too much. This makes the texture too coarse, or, if the cells are expanded still more, they will rupture and a fallen cake will result. To produce a satisfactory butter cake at a high altitude, less baking powder must be used. For cakes made with sour milk and soda, less soda should be used.

Carbon Dioxide as Leavening Agent

Cakes. The liquid at high altitudes evaporates to a greater extent, causing the sugar solution in the batter to become more concentrated. Excessive sugar in the cell walls weakens the structure and makes them more apt to collapse. Thus, reducing the sugar in a cake recipe gives stronger cell walls and makes the cake less susceptible to falling.

The necessity for reducing the sugar has, to some extent, been eliminated by the use of the new shortenings which contain an emulsifying agent. The addition of an emulsifier enables a shortening to tolerate a much larger amount of liquid. In this way, the sugar solution in the batter may be made more dilute, and the finished cake will be more nearly like a sea-level cake in its sugar content (2).

In general, for 5000 ft. the Colorado Experiment Station recommends a reduction of ½ tsp. double-acting baking powder, 2½ Tbsp. sugar, and an increase of ½ to 1 Tbsp. of liquid for a cake containing 2 cups flour. Contrary to popular opinion, there are no set rules for modification of cake recipes for high altitude; the changes necessary depend on the type of cake and the relationship of the ingredients to each other (3, 4).

With *biscuits, muffins, and quick breads,* the baking powder may be decreased slightly, but the structure of the product is such that it will withstand the increased internal pressure quite well (1).

Yeast bread dough rises more rapidly at high altitudes, and it may become overproofed if it is not watched carefully and allowed to rise only until it is doubled in bulk. Less yeast may be used, but most bakers prefer to let the dough rise for a shorter time. Because flour dries out faster at high altitudes, it may be necessary to use more liquid to compensate for this loss and to make the dough the proper consistency.

Cookies usually do not need adjustment for altitude, although slight reduction in baking powder and sugar may improve them.

Pie crust is not affected by altitude except for the faster rate of evaporation; slightly more liquid may be required.

Doughnuts made from most sea-level recipes are frequently found to be cracked, too high in fat absorption, and too hard and brown. To remedy this, the leavening and fat should be decreased, and in richer formulas, the sugar also should be reduced (8).

Air as Leavening Agent

In *angel food cakes,* the leavening agent is air, and care must be taken not to beat too much air into the egg whites. They should be beaten until they form peaks which just fall over. The sugar should be reduced about 1 Tbsp. each 1000 ft. of altitude. A higher baking temperature for a shorter time is more satisfactory (5, 6). Less sugar and more liquid should be used for *sponge cake.* The eggs or egg yolks should not be over-beaten and, if baking powder is called for, the amount should be reduced (7).

Steam as Leavening Agent

For *popovers,* the amount of egg in the batter should be increased and the shortening reduced. This makes a stronger batter which will be able to retain the steam long enough for a crust to form. Popovers made by sea-level recipes lose the steam too rapidly, both by expansion and evaporation, and turn out more like muffins (1).

Cream puff batter, being much heavier, holds the steam well and does not require any correction for altitude (1).

BOILING

When a liquid is heated, vapor begins to form. The bubbles of vapor, being lighter than the liquid, rise upward, but they cannot reach the surface until the pressure within each bubble just exceeds the atmospheric pressure on the surface of the liquid. The temperature at which the bubbles reach the surface and break is known as the boiling point and is the temperature at which the pressure of the saturated vapor within the liquid is equal to the outside atmospheric pressure on the surface of the liquid. Since, at high altitudes, the atmospheric pressure is less, the pressure of the vapor necessary for the liquid to boil is less and will be reached at a lower temperature. For this reason, liquids boil at lower temperatures at high altitudes. The lowering of the boiling point of water amounts to about 1.9°F. for each 1000 ft. increase in altitude. (Water boils at about 202.5°F. at 5000 ft. and at about 193°F. at 10,000 ft.)

Vegetables, Meat, and Eggs

This means that foods which are cooked in boiling water require a longer cooking time to become tender. It is difficult to give any definite cooking rules for vegetables since even with the same kind of vegetables, there are so many variations in size, variety, stage of maturity, and so on. In general, the time must be increased from 4 to 11 per cent per 1000 ft., depending on the vegetable (9, 10). Eggs and meat, such as stews and pot roasts, must also

be cooked for an increasingly longer period with higher altitude.

A pressure cooker is a great convenience at high altitudes for cooking meats, beans, and other vegetables which require relatively long cooking. By increasing the pressure, the temperature at which water boils is raised and the food is cooked more quickly. But the steam within the pressure cooker is also affected by the altitude; the boiling temperature of the water inside at 15 lb. pressure is not as high at 5000 ft. as it is at sea level. To reach the same temperature, the pressure must be increased about 1 lb. for each 2000 ft. elevation. For example, at 5000 ft., a pressure of 17.5 lb. will give the same internal temperature as 15 lb. at sea level. If the pressure cooker has a gauge graduated in 1-lb. divisions, such an adjustment can be made easily. Unfortunately, the gauges of most pressure saucepans do not go above 15 lb.; when using them, it may be necessary to lengthen the time given for cooking a particular food. An increase of 1 to 2 min. is sufficient for most vegetables. Beets, whole potatoes, and sweet potatoes require about 5 min. longer at 5000 ft. However, the Department of Agriculture recommends that weighted gauges, such as those found on most pressure saucepans, be returned to the manufacturer to be corrected to the proper weight for the altitude at which they are to be used.

Canning

Canning is another phase of food preparation which is affected by the lower boiling temperature of water at high altitudes. The time necessary to process fruits and acid vegetables in a hot water bath should be increased with increasing altitude. The United States Department of Agriculture in its latest canning bulletin (11) recommends an increase of 1 min. processing time for each 1000 ft. above sea level, if the time is 20 min. or less, and an increase of 2 min. per 1000 ft., if the processing time is more than 20 min.

Since the temperature of boiling water, even at sea level, is not high enough to kill the spores of the botulinus organism, unless the food is processed for an excessive length of time, non-acid vegetables and meats should always be processed in the pressure cooker. The same rules for increasing the pressure with increasing altitude which were given for cooking vegetables also apply to canning: increase the pressure 1 lb. for each 2000 ft. elevation. With this increase in pressure, the sea-level processing times may be used satisfactorily.

Deep-Fat Frying

The lower boiling point of water influences still another type of food preparation—deep-fat frying. In work done at the Wyoming Agricultural Experiment Station (8), it was found that in cooking potato chips at temperatures recommended for sea level (350° to 410°F.), temperatures of 400° to 410° F. produced over-brown, almost-burned chips which frequently were not cooked through. Lowering the temperature of the fat to 350° to 360° F. prevented too-deep browning. The same was true of the temperature ranges given for French fried and shoestring potatoes and croquettes.

The temperature for cooking doughnuts should also be lowered; 350° to 355° F. is the recommended range.

Candy and Frostings

The lowering of the boiling point because of high altitude also causes difficulty in making candy and frosting. If the old-fashioned cold water test is used (soft ball, hard ball, crack, and so on), the candy will be cooked to the proper consistency.

However, in recent years, the candy thermometer has come into widespread use since it is more exact and not subject to variations of individual judgment. It must be remembered that at high altitudes a sugar solution, like water, boils at a lower temperature. If sea-level directions are followed, the sirup will be too concentrated by the time the prescribed temperature is reached, and the resulting candy or frosting will be too hard. Better results are obtained if for each 1000 ft. of altitude, the temperature is lowered 1.9°F. If desired, before making the candy, the exact boiling point of water may be determined, and the difference between it and 212°F. subtracted from the temperature called for in the recipe. For example, the boiling point of water at 5000 ft. is 202.5°; then 212°–202.5° = 9.5° is the correction. Suppose the temperature for fondant at sea level is 239°; 239° − 9.5° = 229.5°, which is the temperature to be used for fondant at 5000 ft. When the boiling point of water is checked in this way, any day-to-day variations in atmospheric pressure caused by weather conditions will be compensated.

The same corrections used for candy-making should be applied to frostings.

If a thermometer is used in jelly-making, the same temperature corrections should also be used.

SUMMARY

Although great changes have occurred in the life of a homemaker in the West since pioneer days, she is still confronted with the problem of food preparation at high altitudes. But she can still serve nourishing and appetizing meals to her family with little inconvenience if she becomes familiar with the general principles of high altitude cookery. Briefly these are:

(a) The leavening in cakes should be decreased.

(b) Yeast bread should be allowed to rise for a shorter time or less yeast should be used.

(c) Any foods which are prepared in boiling water, either with or without a pressure cooker, should be cooked longer.

(d) Candy, frosting, and jelly should be cooked to a lower temperature.

While most of the work at the Colorado Experiment Station has been done to help the homemaker with her problems of cooking for the family, the same rules may be applied to cookery in larger quantities on an institutional scale.

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Research on Methods for Making Cheeses from Pasteurized Milk

In connection with a Research and Marketing Act project on the utilization of milk in the manufacture of foreign-type cheeses, the Bureau of Dairy Industry late this year initiated cooperative work with the state agricultural experiment stations of Wisconsin and Ohio on the manufacture of brick cheese and various Italian cheeses, respectively. Experimental cheeses have been made, but no results will be available until the cheeses have had time to ripen. Special attention is being given to the problem of making these cheeses from pasteurized milk.

In the Bureau's own laboratories, where the research is largely with Swiss cheese, preliminary results indicate definitely that some of the procedures and conditions generally used in making Swiss cheese from raw milk must be modified if the cheese is to be made from pasteurized milk. During the year, particular attention was given to certain steps which influence the production of acid, because earlier in this work a correlation was observed between the degree of acidity produced in the cheese during the making process and the decrease in acidity in the cold room, during the first stage of curing. The decrease in acidity in the cold room, in turn, seemed to be associated with good quality cheese.

In a practical attempt to control the acidity, water was added to the kettle contents and an equal portion of the whey was removed, thus diluting the whey or "washing" the curd. In general, the cheeses made by the "diluting" method developed less acid and were much better in quality than the control cheeses.

In related research, considerable progress was made toward the development of a means for utilizing the protein from cheese whey in the preparation of cheese spreads and other foods. The grainy crude protein recovered from the whey apparently can be converted into a smooth product by the proteolytic action of the commercial enzyme.—*From Report of the Chief of the Bureau of Dairy Industry, U. S. Department of Agriculture, 1949.*

Work Simplification

Work simplification means saving time and labor in meal preparation. It means finding easier ways of doing the job. . . . Save time by using the correct tools. Measure in large containers as 1 qt. instead of 4 cups. . . . To measure honey, first grease the measuring cup or use the cup in which the shortening was measured. . . . With supplies of dry milk and dried eggs, minutes can be saved during a rush if dry ingredients for gingerbread, muffins, biscuits, and so on are measured and combined during spare moments. . . . Cutting boards save time in chopping foods and cleaning is easier. Place carrots on a cutting board and make long cuts for carrot sticks. Cluster celery and cut crosswise to make celery rings. Never cut one piece at a time. . . . Wash celery in a sieve after cutting. . . . Time can be saved when cutting tips of green stringless beans by placing an even handful on the chopping board and cutting the ends off all in one pull of the knife. . . . Use both hands for doing the job when possible. . . . Arrange sequence of work so there is no break or waste in motion.—*From Oscar F. Beyer's News Letter on Food Distribution Programs Branch Activities for October 21, 1949.*

Nutrition Accounting for Large Groups

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WHEN any organization undertakes to provide food for a group of persons, it assumes responsibility for the nutritional adequacy of the diet it furnishes. People fed in such groups have comparatively little direct control or choice over the food placed before them. They are entitled to receive an adequate diet within the budgetary level. Some people fed in groups can supplement their diets from outside sources; others, such as inmates of old people's and children's homes, mental hospitals, and penal institutions, have no such opportunities.

Even when a good diet is provided, failure to eat all of the food or to make proper selections from among the foods available may result in an inadequate intake. It is usually possible to obtain better acceptance of the diet by giving attention to the food habits of the group as well as to better preparation and service of the food itself, while still keeping within the budgetary allowance. If any considerable outside supplementation of the diet is practiced, it indicates that the supplying agency has failed to meet its responsibilities.

In the management of funds it is customary to require meticulous records and accounting for money expenditures. When money is appropriated or otherwise made available to feed people, it is equally important to have an accounting of the food supplied and used, as evidence of proper expenditure of funds to provide an adequate diet. Such nutrition accounting is possible with our present knowledge of the composition of foods and of the major contributions made by the various classes of food to the nutritive requirements of people. It is applicable to any given set of food habits and permits a ready interpretation of the diet provided in terms of its adequacy.

The records necessary for nutrition accounting should contain the quantities, weight, or volume, of all foods supplied and the number of persons fed during the period of accounting. They should also include the amount of waste whenever possible, although some progress in the operation of an institution can be attained without data on waste. Nutrition accounting automatically leads to greater attention to detail, and usually the waste is soon differentiated into that involving edible and non-edible food.

GROUPING OF FOODS SIMPLIFIES ACCOUNTING

The report, review, and analysis of the records are simplified by grouping together foods of approximately the same nutritive value, such as meats, leafy green and yellow vegetables, and grains and grain products, and reporting the weight of each group or subgroup of food used. Subgroups are desirable when a particular food or group of foods is used in large quantities or has a marked effect upon the nutritive value of the diet, such as potatoes in relation to other vegetables, or tomatoes and citrus fruits for ascorbic acid. Subgroups may vary according to regional differences, special dietary habits, or costs. For example, spaghetti and rice might be put in a subgroup because if used too often, they create monotony. The grouping of foods has the further advantage of reducing the number of items to be reported. It also takes into account the practical fact that nutrients may be obtained from any of a number of different foods within a group, even though the number of foods served at a meal and in a given day is limited.

The report of the number of persons served is usually expressed in man-days of three meals per person and includes all persons served food. When there are occasional guests, extra meals, or absences, the total man-days may be determined by recording the total meals eaten, divided by the number of meals served in a day.

Records of the amount of food used, reduced to a man-day basis, can be used for a rapid analysis of the probable adequacy of the diet. A more careful analysis may be made by using tables of food composition to calculate the amount of nutrients in each food or in groups of foods. The advantage of tables of composition of food groups lies in the fact that people's food habits and food patterns are relatively constant, while there are variations in the quantities of individual foods that occur in a group within a season or in geographic regions. The weighted average for food groups used by the U. S. Army and weights of food in various containers are contained in Army Technical Manual 8-501 (1). The composition of food groups should be weighted according to the proportion of foods within a class commonly used in a

given institution in a region or a season. The use of tables of composition of food groups applied to the weights of classes of food used in a particular day simplifies calculations and also represents the approximate composition of the dietary that may be expected throughout the year.

THE RATION

A ration or food allowance in terms of foods used in large amounts and food groups is invaluable in planning and adjusting the adequacy of food supplied in the operation of an institution. Before establishing a ration for an institution, or modifying one in existence, it is important to determine the per capita food pattern or quantities of food in use and characteristic of the institution. Such a pattern may be obtained by tabulating from the accounts of the institution the quantities of food used in three or four typical months of a year. The food pattern is then adjusted with regard to nutritional adequacy in relation to money available.

The ration has a variety of uses. It becomes a measuring stick in planning requirements, purchases, farm activities, the money required, food control, and in analyzing approximate nutritive value, cost, and improper expenditures. An established ration when used to arrive at the cost, or estimated cost, for each of the food groups, and when the financial account is similarly subdivided, becomes a useful tool. Comparison of the quantities of the various food groups used and their cost with the ration groups and their estimated cost, makes it possible to determine whether a high cost in a particular period is due to excessive use of one group, such as meat, or the normal or even lower use of foods of higher quality or cost within a group.

In Table 1 is an extract from the accounts for 1937 of a penal institution which illustrates a nutrition account and the classification of foods found to be desirable for such an institution. It also gives amounts of food in the ration at that time and an estimated cost. The latter is used to approximate the money value of the ration at a given time for use in comparing the financial accounts and variations in food costs.

FOOD PATTERNS IN EACH INSTITUTION

Experience with nutrition accounting has shown that a given institution or Army mess tends to follow its own general food pattern. There may be variations from season to season, cook to cook, or administrator to administrator. In general, however, the pattern remains fairly consistent, so much so that any marked change shown in the distribution of food is significant and points to some alteration in conditions that warrants investigation.

This tendency toward a characteristic food pattern increases the significance of variations in the amount of food used per capita per day. Once the nutritive value of the food pattern is known, the effect of

TABLE 1

Extracts from the accounts for 1937 of a penal institution showing the use of a nutrition account and the classification of foods

FOOD CONSUMED PER MAN			RATION PER MAN		
Item	Amount	Cost* per day	Item	Amount	Estimated cost per day†
	lb./day			*lb./day*	
Meats, fish	0.738	$0.079	Beef	0.75‡	$0.071
Lard, oils	0.096	.014	Margarine	0.15	0.019
Butter, margarine	0.054	0.007			
Grain products	0.755	0.027	Flour	0.80	0.018
Spaghetti, rice, etc.	0.028	0.002			
Dairy products	1.078	0.027	Milk, fresh	1.00	0.020
Eggs	0.035	0.007	Eggs	0.03	0.006
Legumes, dried	0.031		Beans, navy	0.10	0.007
Sugar, sirups	0.249	0.012	Sugar, granulated	0.25	0.012
Potatoes	0.492	0.007	Potatoes	1.00	0.015
Roots, other vegetables	0.195	0.003			
Leafy green and yellow vegetables	0.902	0.022	Cabbage	0.60	0.005
Tomatoes, citrus fruits	0.378	0.009			
Other fruits	0.525	0.017	Apples	0.15	0.003
Dried fruits	0.042	0.003	Prunes	0.08	0.003
Food adjuncts	0.023	0.003	Yeast	0.015	0.0002
Spices, etc.	0.081	0.004	Salt	0.10	0.0014
Beverages	0.103	0.013	Coffee	0.10	0.013

* Much food was produced on the farm; prices reflect the reduced cost.

† Based on ration allowance and cost of food item used in greatest amount. Experience had shown that in practice the total is approximately correct to within ± 5 per cent, but +10 per cent is allowed in evaluating reasonable expenditures.

‡ At present this has been reduced to 0.6 lb.

variations—for example, a decrease in one group or subgroup—can be evaluated. It is first necessary to note any compensating variation in other food groups that supply the nutrients the first group has hitherto furnished in important amounts. If satisfactory adjustments have not occurred, it is obvious that a suitable correction in the diet must be made to insure an adequate diet.

There may be some question as to the accuracy or significance of the data on food consumption obtained from kitchen or store room records. We have found, however, that it is possible to detect gross deviations from actual food consumption through a comparison of the nutrition accounts over a period of months or weeks. Clues to such deviations are marked variations from the food pattern or in quantities of food consumed in relation to (a) the group's actual capacity to eat, (b) the season, or (c) probable likes and dislikes of the inmates for certain foods in an institution.

A nutrition account provides factual evidence which is subject to review in detail, and hence, it is the first step in nutritional improvement or administrative control. It provides information on the quantities of food used, something which is not provided by the menu. The menu is the cook's work sheet and often is concerned with mixtures of food, and usually provides little information on quantities of the food groups used.

NUTRITION ACCOUNTS IN USE

Nutrition accounting, in addition to its value as evidence of the nutritional adequacy of the diet, is an administrative tool. It has been successfully used in this way in the Bureau of Prisons, U. S. Department of Justice, and in state institutions (2–5). In the former case the nutrition account was used to check on the success of the operations when a standard food ration was introduced as the basis of feeding in place of the cost of food per meal or per day. Messing operations were maintained on this basis in federal prisons in widely different parts of the country at an improved and satisfactory nutrition level with increased satisfaction to the inmates and at a considerable saving in money. Nutrition accounts have the added advantage of offering impersonal evidence as to mess operations of a particular institution in case of complaints of its food service. Through them, too, the average food pattern of an institution is shown. However, if the population of an institution is mixed with regard to age, sex, or degree of activity, it is necessary to determine a weighted average requirement with which to compare the data on food actually used.

HOSPITAL NUTRITION ACCOUNTING

There are conditions under which it is desirable for both administrative and nutrition purposes to keep separate nutrition accounts within an institution. Such cases include large institutions where a considerable number of individuals are served in separate dining rooms operated at different levels of acceptability, quantity of food required, or costs. This is especially true in institutions and hospitals where the staff, as part of its compensation, receives more desirable or expensive meals than the inmates, patients, or servants.

Hospitals present a special problem because a large proportion of the patients receive special diets. Nutrition accounting is of more value in relation to the administration of hospitals than to the nutritional status of the average patient. Tuberculosis hospitals and those in which records of certain wards are kept might be an exception. Nutrition accounts in hospitals are useful in relation to the overall operations and are indicative of reasonable care or of extreme waste of food. The food patterns of hospitals, as of other institutions, tend to be fairly constant (6) over a period of time.

Marked deviations in the usual pattern are, therefore, significant and worth checking. Quantitative food patterns for use in evaluating nutrition accounts of hospitals should be based on experience and should be sufficiently liberal to permit the physician a reasonable latitude in prescribing diets. Where the quantities of food used exceed such limits, an examination of the number and type of patients in the hospital and their diets will disclose the presence or absence of a special problem.

SUMMARY

The state, governmental, or private agency that supplies food to groups of people assumes responsibility for the adequacy of the diet furnished. Nutrition accounts which show the quantities of groups of food of similar nutritive value or of special dietary importance and the money expended for them on a per capita basis are useful aids in appraising the adequacy of the diets supplied as well as the wise expenditure of money allocated for food. They often lead to savings in the cost of feeding as well as assurance that an adequate diet is provided for the inmates of the institution involved.

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Food Consumption in a Rural Area of Southwest Virginia[1]

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EARLY in 1944 an attempt to study the effect of a program of fertilization of the soil on the people living on the land was undertaken cooperatively by the Virginia Agricultural Experiment Station, the Virginia Agricultural Extension Service, the Home Economics Department of the Virginia Polytechnic Institute, the Virginia State Board of Health, the Medical College of Virginia, and the Tennessee Valley Authority. The neighboring communities of Konnarock and Green Cove were selected for the study. These are isolated areas located in the mountains of southwestern Virginia. This extreme isolation has been a contributing factor in maintaining a pure racial stock, which is considered to be predominately Anglo-Saxon. The inhabitants of the areas are for the most part farmers with small acreages and small incomes.

The study was set up with four distinct phases: agricultural, medical, clinical, and nutritional. This discussion will deal only with the food consumption of the cooperating subjects during the spring and fall of 1946.

PROCEDURE

Due to the nature of the study, it was decided to select cooperators whose physiologic demands were such that they might be expected to show nutritional deficiencies, provided their food intake was inadequate. They were grouped by sex and age.[3]

The first group was composed of children of both sexes with an age range from two to six years. It was thought that the diet of children of this age was apt to receive less attention than that of the child under two or of the child after he had entered school.

The next two groups were boys between twelve and sixteen and girls between the same ages. It was reasoned that these adolescent children were more likely to be susceptible to dietary deficiencies than pre-adolescent children.

The next two groups were women between twenty and thirty, and thirty and forty years of age (these age groups were later consolidated.) During the most active childbearing period, it was logical to expect these women to reflect poor nutrition, if their food intake was low.

Men between forty and sixty made up the last group. Dr. Tom D. Spies indicated (in private communication) that clinical deficiencies are more frequent in men over fifty years of age.

After completing the work on the organization of the project, a comprehensive survey of both Konnarock and Green Cove was made. From this we learned the size of the farm, farmer's tenure, approximate annual cash income, number of persons in each family, their age, sex, general health, food preferences, and eating habits. From the portion of these data relating to the family, lists were compiled of all persons living in the area who fell into the above-mentioned sex and age groups. From those lists our cooperators were chosen by random selection.

After the individuals for each group had been selected, they were given a form on which they recorded their food consumption for a week. Detailed instructions for recording the food intake were given to each person who was responsible for keeping the record. Subsequent help was available when needed. It is interesting to note that, despite the cooperators' complete lack of experience at the beginning of the study, a comparison by years of the analyzed dietaries revealed great similarity. This leads one to believe that the housewives have kept

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[3] Throughout our study we have maintained the same headings, with the same people in each group. Thus our 1946 cooperators were two years older than they were when the study was started in 1944.

TABLE 1

Daily intake of dietary essentials of subjects in this study, according to age groups

ITEM	NUMBER IN GROUP	CALORIES	PROTEIN	CALCIUM	PHOSPHORUS	IRON	VITAMIN A	THIAMINE	NIACIN	RIBOFLAVIN	ASCORBIC ACID
Children 2–6 Years											
			gm.	*mg.*	*mg.*	*mg.*	*I.U.*	*mcg.*	*mg.*	*mcg.*	*mg.*
Spring	50										
Mean		1720	60	1143	1237	9	4730	967	7	2309	38
Range		908–2952	29–104	138–2045	570–2089	4–17	620–13,898	357–2195	2–14	1136–4217	6–99
Fall	62										
Mean		1939	60	1141	1227	10	4068	932	8	2295	34
Range		937–3550	24–107	412–3011	474–2600	3–18	636–9563	394–2729	3–14	814–5594	9–82
Recommended allowance (9)		1600	50	1000	none	8	2500	800	8	1200	50
Boys 12–16 Years											
Spring	17										
Mean		2230	75	1434	1577	12	7945	1195	8	2797	50
Range		1410–3132	43–126	910–2062	972–2853	6–16	2766–15,637	806–1831	4–15	1682–5716	30–72
Fall	18										
Mean		2404	75	1350	1517	12	4982	1200	11	2738	36
Range		1569–3614	52–129	767–2732	916–2432	8–25	2785–11,625	775–2432	7–18	1556–5377	18–64
Recommended allowance (9)		3200	85	1400	none	15	5000	1500	15	2000	90
Findings of Ferguson and McHenry (10)		3599	110	1700	none	20	10,580	1400	none	2900	68
Girls 12–16 Years											
Spring	16										
Mean		1706	56	856	1046	9	5449	1003	7	1788	42
Range		864–3629	21–114	271–1283	503–1904	5–21	1095–13,809	329–2527	3–16	808–2946	10–98
Fall	17										
Mean		1814	52	858	1008	9	3848	906	8	1730	30
Range		1022–3181	25–79	542–1312	580–1435	4–17	1738–9330	380–1985	3–12	966–2326	6–72
Recommended allowance (9)		2600	80	1300	none	15	5000	1300	13	2000	80
Findings of Ferguson and McHenry (10)		2540	80	1200	none	14	6070	1000	none	2100	56
Women 20–40 Years											
Spring	28										
Mean		1676	60	1032	1154	10	6318	981	7	2136	45
Range		762–2562	25–110	263–1854	472–2001	4–17	1544–17,697	269–1787	2–24	868–3247	5–110
Fall	30										
Mean		1809	56	960	1085	10	5186	986	8	1968	36
Range		1070–3180	32–86	428–1542	615–1560	6–18	1452–14,814	441–2585	4–15	1038–3120	10–111
Recommended allowance (9)		2400	60	1000	none	12	5000	1200	12	1500	70
Findings of Young (11)		1810	59	826	none	9	5351	967	none	1679	108
Men 40 Years and Over											
Spring	16										
Mean		2381	79	1016	1386	16	9295	1629	11	2402	56
Range		1504–3823	59–115	335–1654	841–1939	11–31	3174–29,209	754–2690	5–17	1226–3745	26–169
Fall	17										
Mean		2511	77	1011	1358	15	6921	1816	14	2302	44
Range		1550–4039	46–109	405–1682	860–2082	10–21	2518–13,537	893–8354	8–26	1122–3762	18–89
Recommended allowance (9)		3000	70	1000	none	12	5000	1500	15	1800	75

the records conscientiously and have maintained consistent measurements throughout. Other studies in the South have indicated the relative reliability of such methods (1).

Records of food intake were obtained twice each year, once in early spring and again in the fall. (Figures presented in this paper cover only 1946, however.) The food records were calculated by the short method as described by Steinkamp, Robinson, and Kaser (2). Due to the similarity of the food patterns in the Tennessee and Virginia areas, it appeared justifiable to employ the same food composition tables.

The information on the food consumption of the cooperators was used in three ways. First, the findings were compared with those of other workers doing similar studies. Second, they were compared with the recommendations of the National Research Council as revised in 1948 for daily consumption of different age and sex groups. Third, they were compared with findings of the physical and clinical examinations of the cooperators.

The third use made of the analysis of the dietary records will not be discussed here beyond stating that our findings were similar to those of Darby (1), Milam (3), and Youmans (4–6) who found little correlation between the supposed manifestations of dietary deficiencies, as revealed by the medical and clinical examination, and the dietary intake.

We recognize, with Darby (1) and McHenry (7), that further research on the human nutritional requirements is greatly needed and that, until we have scientific findings upon which to base our recommendations for dietary requirements, it is necessary to recognize the limitations of dietary standards such as the Recommended Dietary Allowances prepared by the National Research Council. Wilder states that the recommendations "represent as far as possible the consensus of informed opinion as to the amounts justified by available evidence respecting the range of requirements of normal persons" (8). We have used these recommendations because they are an available "yardstick" for measuring the adequacy of diets.

By comparing our findings with the recommended allowances we were able to determine where the diets of our groups fell within "the range of requirements of normal persons." (8). It is not possible, however, to conclude that intakes below the recommended level signify the existence of deficiency states in the subjects.

The study of the agricultural, medical, and clinical phases of this study are now in progress, and it is the plan of the general committee to prepare these findings for publication in the near future.

DISCUSSION

In the following tables the data are presented in different ways. In Table 1 are given by season the mean and range of the intake of the different age groups as well as the corresponding daily allowances recommended by the National Research Council (9). We have also compared our findings with those of Ferguson *et al.* (10) and Young (11).

In Table 2 the average daily intake of the group as a whole for both spring and fall has been compared with figures from studies by Milam (3), Milam and Darby (12), and Pett (13). These comparisons are especially interesting as the first two studies were made in a neighboring state, the last in Canada.

In Table 3 are presented the percentages of the daily intake relative to the recommended allowances. The data as presented in Tables 1 and 3 indicate that the children in the so-called two-to-six-year group were the most abundantly fed and consumed over 100 per cent of the recommended allowances for all the nutrients except ascorbic acid, for both seasons, and niacin in the spring. Their better diet might be due to the fact that the mothers gave more attention to the diet of the preschool children.

Except for calories, niacin, and ascorbic acid, the adolescent boys' consumption of the dietary nutrients was 80 per cent or more of the recommended allowances. Their consumption approximated or ex-

TABLE 2

Average daily dietary intake of subjects in this study compared with those of other studies

INVESTIGATION	CALORIES	CARBOHYDRATE	FAT	PROTEIN	CALCIUM	PHOSPHORUS	IRON	VITAMIN A	THIAMINE	NIACIN	RIBOFLAVIN	ASCORBIC ACID
		gm.	*gm.*	*gm.*	*mg.*	*mg.*	*mg.*	*I.U.*	*mcg.*	*mg.*	*mcg.*	*mg.*
This study												
Spring	1860	194	99	64	1105	1259	10	6176	1088	8	2282	44
Fall	2023	232	95	62	1081	1223	11	3150	1078	9	2209	35
Milam (3)												
Spring	1930	219	86	53	530	*	9	3985	698	*	1044	23
Fall	1765	206	76	47	650	*	9	3803	760	*	1244	33
Milam and Darby (12)	2443	288	107	82	920	*	17	6407	1524	12	1837	39
Pett (13)	3400	431	140	104	1011	*	17	6242	2370	21	2250	65

* Not calculated.

TABLE 3

Percentage of Recommended Dietary Allowances (9) consumed on the average by subjects in this study

SEASON	PERCENTAGE OF RECOMMENDED DIETARY ALLOWANCES (9)								
	Calories	Protein	Calcium	Iron	Vitamin A	Thiamine	Niacin	Riboflavin	Ascorbic acid
Children 2–6									
Spring	108	120	114	112	189	121	88	192	76
Fall	121	120	114	125	163	116	100	191	68
Boys 12–16									
Spring	70	88	102	80	159	80	53	140	56
Fall	75	88	96	80	100	80	73	137	40
Girls 12–16									
Spring	66	70	66	60	109	77	54	89	52
Fall	70	65	66	60	77	70	62	86	38
Women 20–40									
Spring	70	100	103	83	126	82	58	142	64
Fall	75	93	96	83	104	82	67	131	51
Men 40 and Over									
Spring	79	113	102	133	186	109	73	133	75
Fall	84	110	101	125	138	121	93	128	59

ceeded these recommendations for calcium, vitamin A, and riboflavin. This indicates that the boys either consciously or naturally selected a diet which, while low in calories, had a relatively high vitamin and mineral content.

The intake of the adolescent girls compared with the recommended allowances was lower. The greater deficiencies ranged between 38 per cent for ascorbic acid and 77 per cent for vitamin A. The riboflavin intake was better, as was that of vitamin A in the spring. The latter exceeded the recommended allowances. The girls' desire to remain slender may have influenced their food intake.

It is interesting to note the difference in food intake between the Konnarock boys and girls and the boys and girls in East York Township, Province of Ontario (10). In practically every case, the food intake of the latter was greater and more nearly resembled the National Research Council's recommended allowances (9). It might be, as Milam suggests (3), that the standards are more applicable to a colder climate than is found in Virginia and neighboring states.

The women reflected a better choice of food than the girls. The caloric intake of the two groups did not differ greatly, but the percentage consumption of the recommended allowances of the other nutrients was definitely higher for the women. This seems hard to explain unless the older women intentionally tried to eat a better diet, had learned to like more of the nourishing foods, did not give consideration to increased weight, or had more contact with the local doctor, who at all times emphasized the importance of carefully selecting one's foods.

A comparison of the intake of the various nutrients of the women in this study and those of a group of women students living in a sorority house at Cornell University (11), reveals an interesting similarity. Only in the case of ascorbic acid was there any marked difference, the sorority girls having consumed over 200 per cent more than the women in this study.

The men met the National Research Council's recommendations for all nutrients except niacin, ascorbic acid, and calories. A possible explanation of this might be that the men had a better appetite, being more relaxed during the meal than the women who had both to prepare and serve it. It is also sometimes thought that if there is any shortage of food on the table, women will refrain from eating their share in order that men, whom they feel work harder and therefore need more, might have larger servings; and again their natural choice of food might have been better.

A study of the range as presented in Table 1 gives one an idea of the distribution for the consumption of different nutrients.

In Table 2, a comparison of the average daily intake of our subjects is made for spring and fall with the average daily intake of a small North Carolina community (3), with the average daily intake of a southern county (12), and with the estimated supplies of nutrients in foods moving into civilian consumption per person per day in Canada in 1943 (13). It should be noted that the figures used in the Canadian study were derived from analysis of total food supplies available for consumption; no allowance was made for waste.

The intake of the people in this study exceeded that of the people in the North Carolina community (3) in all nutrients except calories in the spring and vitamin A in the fall. This may be due to the fact that our area is definitely rural and that the North Carolina study was conducted in a mill community. Furthermore, the economic conditions were different at the periods the surveys were made. The intake of calcium, riboflavin, and ascorbic acid in the spring was greater in Konnarock than in one North Carolina county (12). Again, availability of milk in this Virginia area might account for the greater intake of calcium and riboflavin. The Konnarock people had a small excess in calcium both spring and fall, and a similar excess of riboflavin in the spring, over that of the Canadian estimate of nutrients reaching its population (13).

From a study of the mean daily intake of each of the individual nutrients we found the following:

Calories. The caloric intake of all our cooperators except the so-called two-to-six-year group was lower

than recommended by the National Research Council (9). This is consistent with the findings of Milam (3), Milam and Darby (12), and Youmans (5). Despite the low consumption of calories, the people apparently had the necessary energy to do their work.

Protein. The protein intake of the adolescent boys was slightly below the recommended allowances. That of the girls was considerably lower. This could be due to the small amount of food they consumed. Milam and Darby (12) had similar findings. Youmans' (4) figures for protein intake for children were considerably lower. He states that 82.6 to 84.6 per cent of the children in his survey consumed less than 20 gm. while the average daily intake for the children in this study was 60 gm. in the spring and 61 gm. in the fall.

Calcium. The children in our study met, with a small surplus, the recommendations for calcium (9). This was also true of the boys in the spring, but in the fall they were low. Youmans (14) found 68 per cent of the white people in his study with deficient calcium intake, with the deficiency more marked among the children from ten to twelve, boys twelve to twenty, and girls thirteen to fifteen. The girls in this study failed to meet the recommendations in both the spring and fall, but the intake of all other groups, for both seasons, except the boys in the fall, compared favorably with their recommendations. Over 50 per cent of Youmans' men had a calcium intake comparable to that recommended, while our data showed that 100 per cent of our men met the recommended allowance. Milam (3) found the calcium intake of both his adults and children lower than the recommended allowances (9). It was also lower than our data showed the intake of our cooperators to be.

Iron. The iron intake of the girls would seem to be the only one that was seriously low, although the women and boys did not fully meet the recommendations.

Vitamin A. Due to the large consumption of the green leafy vegetables in the spring, all our groups met the recommended allowances for vitamin A during that season. In the fall, the boys and girls failed by a small margin. This was contrary to Youmans' findings (6) but similar to the report of Milam and Darby (12). The increased use of sweet potatoes in the fall no doubt helped to maintain the fall intake of vitamin A.

Ascorbic acid. A low intake of ascorbic acid continued throughout the study. A similar situation has been found in other studies (3, 10, 12). It is especially difficult for the people living in Konnarock area to get the recommended amount of ascorbic acid. Tomatoes grown in the area are usually destroyed by blight, citrus fruits are not easily available, and only a few farmers raise enough apples for the continuous use of their families. Potatoes grow well but are usually pared before cooking, and often enough are cooked at one time for the whole day, resulting in a loss of ascorbic acid. A similar condition was found in a survey made in Newfoundland (15) by Cuthbertson. Cabbage can be raised but is not produced in sufficient quantity to meet the needs. In spite of the low intake of ascorbic acid, no signs of scurvy were revealed by either the medical or clinical examinations.

Thiamine. The thiamine intake of the children in our study was similar to that recommended by the National Research Council (9). This was true of no other group, except the men.

Riboflavin. Meeting the recommended allowances for riboflavin seemed to be no problem for our cooperators. In every case except the adolescent girls, the intake was over 100 per cent of the recommendations. In like manner, Milam and Darby (12) found that the people in their study had satisfactory intakes of this vitamin.

Niacin. The intake of niacin for people in this study was relatively low, but our physical examinations revealed no pellagra. Similar findings are recorded by others (12, 16).

SUMMARY

Between January 1, 1944, and December 31, 1947, a study was made of the food intake and physical condition of farm people living in Green Cove and Konnarock, Virginia, two isolated areas in the mountains of Southwest Virginia. The results of a study of the daily food intake of all the cooperating subjects for 1946 is reviewed.

Using the National Research Council's recommended allowances as a basis for judging the quality of the daily intake of the people in our study, it appears that the children between two and six years of age were the best fed group. The adolescent girls were apparently the most poorly nourished. Their low food consumption might be related to their desire to be slender.

There was remarkable similarity between the food intake of the adolescent boys and the women. Next to the children, the men apparently had the best diets. Possible explanations for these conditions were presented.

Ascorbic acid intake was consistently low for all the subjects except the children. It is interesting to note, however, that while the ascorbic acid intake for all groups was lower than the recommended allowances, the physical and clinical examinations of the subjects revealed no evidence of scurvy. In like manner, the same examinations showed no evidence of pellagra although the niacin intake was low.

The most pronounced seasonal differences in food intake was the increased consumption of greens during the spring. The consumption of sweet potatoes was greater in the fall. Other seasonal differences were not large enough to be significant.

It is the plan of the committee in charge to prepare further reports on the other aspects of this study.

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Sodium in Margarine

Since low-sodium diets are used in increasing numbers with clinic patients at the Medical College of Virginia, we have been trying to adapt our dietary instruction to the economic situation. Some patients are able to obtain unsalted butter from the country, but it is difficult to obtain in the city and is high priced when available. Margarine costs less than one-fourth the price of butter in Richmond.

In order to reduce the sodium content, we have suggested working the softened margarine in repeated washings of cold water. However, a more satisfactory method seems to be to melt the margarine, skim off the surface foam, and pour off the clear part, allowing it to harden. Washing the margarine is often difficult or impossible for some of the older or more feeble patients, while melting is a much easier method.

Dr. Nelson Young, Assistant Professor of Chemical Pathology, at the College has tested two kinds of margarine bought on the retail market in Richmond. The determinations were made with a flame photometer. Results are shown in the table below:

MARGARINE	SODIUM		
	As purchased	Washed	Melted
	mg./100 gm.	*mg./100 gm.*	*mg./100 gm.*
Brand A	1128	483	84
Brand B	1163	424	116

Ten gm. "melted" margarine, approximately 2 tsp., would thus give 8.4 or 11.6 mg. sodium, as compared to 110 mg. for an equal amount of margarine as purchased (based on Mead-Johnson figures). On the basis of these data, it would seem that melting the margarine and using the clear middle layer, offers one practical approach to a reasonably priced, generally available low-sodium spread for bread.—*Marguerite L. Pettee, Medical College of Virginia, Richmond.*

Editorial

RUTH YAKEL, EXECUTIVE SECRETARY, AMERICAN DIETETIC ASSOCIATION

The appointment of Ruth Yakel as Executive Secretary of the American Dietetic Association will meet with approval. She took over her new duties on July 1, 1950.

Miss Yakel was born in Paducah, Kentucky, and lived there just long enough to speak with a southern accent. Her family moved to New York City and enrolled her in the Horace Mann Kindergarten. Born in a teacher's home, Miss Yakel has had a cultural background. Her father and mother, her grandmother, and her brother were all teachers, her father being Professor of Education at James Millikin University.

Miss Yakel attended grade school in East Stroudsburg, Pennsylvania. Then she returned to New York City where her father completed his doctorate. Next she attended school in Jacksonville, Illinois, until ready for the eighth grade.

Since 1936 Miss Yakel's home has been Decatur, Illinois. She graduated from the Decatur High School in 1937. Then, as she says, "being so used to change in school systems, I attended summer school for three consecutive summers at three different schools." These were: Eastern State Teachers College, Charleston, Illinois, Illinois State Normal University, Normal; and the University of Chicago.

Miss Yakel's interest in foods began early, her mother having had a major in home economics in college under Mabel Campbell at Illinois Wesleyan College, a fact which no doubt influenced her daughter's choice of a vocation. As a girl scout, Ruth planned and bought food for overnight hikes. She helped several times as a substitute for her mother when her church unit was serving a supper and while in high school helped in a camp kitchen.

At Millikin University, Miss Yakel was a member of Pi Beta Phi sorority and of the Home Economics Club, serving as its President one year. There she completed her work for Smith-Hughes and her requirements for a dietetic internship. In 1940–41 she took her internship at the Indiana University Medical Center, Indianapolis.

Miss Yakel took the position of dietitian for a small hospital in Logansport, Indiana, "to see if I could practice what I had learned." She resigned to accept the position as Head Therapeutic Dietitian of the Iowa Methodist Hospital at Des Moines. She

Photo by Liang Shen-Courtney Studio, Indianapolis

RUTH YAKEL, EXECUTIVE SECRETARY
AMERICAN DIETETIC ASSOCIATION

was there from 1942–45. She was a member of Quota Club International and of A.A.U.W. and found time to take a course in accounting at Drake University. It was at this time that she began thinking, planning, and saving for a masters degree, and as soon as the war was over, she resigned to attend graduate school. She was in Teachers College, Columbia University, in 1945–46, when she received her M.A. degree with a major in nutrition and education.

Miss Yakel was Instructor in Home Economics at the University of Utah in Salt Lake City in 1946–47 and was active in the Utah Dietetic Association.

In the summers of 1946 and 1947, she was Director of Food Services at College Camp, Wisconsin, where she was responsible for feeding 1000 people per meal. She used her influence to interest girls in home economics and dietetics.

In 1947, she returned to Indiana University Medical Center as Instructor in Dietetics, and in 1949–50, she has been Acting Assistant Director and Therapeutic Dietitian.

Miss Yakel has made a place for herself at the Indiana University Medical Center and in the Indiana Dietetic Association. She was Chairman of Professional Education for two years and was Co-Chairman of the state convention in 1949. She has taken part in programs at the Indiana Association's convention and at the Tri-State Hospital Assembly in Chicago in 1949.

Miss Yakel is still interested in furthering her education and has recently taken extension courses at Indiana University and a short course at Michigan State College.

Ruth likes people and can work harmoniously with others. She comes to her new position well equipped educationally and with administrative experience. As Executive Secretary, she will serve the American Dietetic Association well.—*Lute Troutt, Director, Dietary Department, Indiana University Medical Center, Indianapolis.*

WASHINGTON—THE CITY OF SUPERLATIVES

If you are a casual sightseer and have not spent hours of intensive study on guide books and other "Inside Washington" literature, you have much in store for you when you visit the Federal City at convention time, for it is a vast collection of the wondrous: the finest, the oldest, the largest, the longest, *ad infinitum.*

A logical beginning for this account is Union Station, where those of you who travel by rail will arrive. There, in the main passenger concourse of the station, you will view your first superlative; you will find yourself in the *largest* room in the world under one roof.

Nearby, within sight of the station, rising from the brow of a hill, stands the Capitol, the *most impressive* public building in Washington. It has inspired awed admiration and dwarfed millions of visitors since it was completed in 1817. (The first Capitol, you remember, was burned during the War of 1812.)

A short jaunt away you will recognize the low-domed structure surmounted by the Torch of Science, the Library of Congress. Here may be found some of the *busiest* window washers in the District, for there are over 2000 windows to polish so that light may benefit the readers of the 16 million items which have accumulated within these walls. Notable among them are the Gutenberg Bible, printed from 1450 to 1455; an ancient draft of the Magna Carta; the Declaration of Independence; and the Constitution.

If you are not given to cross-country hiking, you will take a vehicle to see one of the stellar attractions of the city—the house which is unique in that it receives more frequent reference than any other in the entire country—the White House. Its first intended occupant, George Washington, participated in the ceremonies at the laying of the cornerstone in 1792, but did not live to occupy the *first official* presidential home.

Relatively near, to the east, is an imposing structure which draws thoughtful and speculative attention. It is the Treasury, where uniformed guards watch over perhaps the greatest wealth in greenbacks and highly valued metal under one roof.

All of this currency and the stamps and securities of the government are printed at the Bureau of Engraving and Printing, known as the world's *largest* engraving plant. From especially constructed galleries on each floor, you may watch the printing of these attractive fragments of paper.

An association of ideas leads next to the Department of Justice Building where you may visit a crime laboratory, replete with a display of law-breakers' weapons, properly tagged with the names of the one-time owners. Here, too, is the Finger Print Division of the Federal Bureau of Investigation, with its file of 5 million finger prints, claiming distinction as the world's *greatest* collection and insuring supremacy by receiving approximately 2700 new ones each day.

Antiquity now enters the picture with the somewhat outmoded-looking Arts and Industries Building. Quite appropriately, it houses, among countless relics, the first Franklin printing press, the first sewing machine, telephone, telegraph instrument, and automobile.

If the role of quiet observer has begun to pall, a visit to the National Academy of Sciences is suggested. There you may operate the electrically controlled exhibits—some of the *most unusual* to be found anywhere—which illustrate the "fundamental phenomena of nature and the progress of scientific research."

No tour of Washington may be considered complete without a glimpse of the Pentagon Building, or, possibly a marathon through its 17½ miles of corridor. This massive structure, completed in 1943, spreads over 34 acres of land just across the river in Virginia; the greatest walking distance between any two rooms takes but 6 minutes. It may be readily accepted that this is the *largest* office building ever erected.

When pleasurable reactions to man's overwhelming creations no longer rise spontaneously within you, a visit to the National Zoological Park is recommended. Here, in 175 acres of nature's green territory, live hundreds of specimens of animals and birds, imported from countries all over the sphere. This zoo is maintained largely as an experimental station, in an effort to keep alive the species of American animals which are threatened with extinction.

Lest you fail to be impressed, it is reluctantly added that this is one of the *largest* and *most fascinating* of all zoos in the United States.

Current Comment

A COMPARISON OF THE FOOD CONSUMPTION OF MEN AND WOMEN COLLEGE STUDENTS

GLORIA WHITE BLEWETT AND CECILIA SCHUCK

Department of Foods and Nutrition, School of Home Economics, Purdue University, Lafayette, Indiana

Although a large number of studies on the dietary practices of college women have been reported, there are relatively few that provide information on the food consumption of college men. Latzke (1) has compared the food selection of men with that of women following observations in a college cafeteria for two ten-day periods. She found that the men consumed more milk, cereals, and meats than the women, but that the women ate more fruits. Lantz *et al.* (2) also observed a higher consumption of milk and meat by college men, and Young and Storvick (3) found that the diets of freshman men scored higher than those of freshman women. Odle and Kramer (4), using the inventory method, have reported a study of the food consumption of 1095 army students for a two-week period. These men had the recommended number of servings from the different food groups and their diets provided the essential nutrients with a generous margin.

Because of the paucity of information on the dietary practices of college men, it was felt that further study would be profitable. Also we were interested in comparing food habits of Purdue University freshman men with those of freshman women.

Reaching the men presented problems not encountered with the women. The women could be easily reached through freshman food classes, but only a small number of men are enrolled at Purdue in these classes. It was finally decided to work through a physical education course called "Personal Living" which is required of all freshman men. It was felt that a course of this type offered opportunity for developing interest in food habits and that this interest might in turn contribute to certain objectives of the course. In presenting to the students the matter of keeping records, the importance of accuracy in recording food intakes was stressed.

Approximately 1000 forms were distributed to the men in October, 1948, to obtain records for a period of one week. The students were told that they need not give their names as it was felt that in some instances truer records might be obtained if the individuals concerned were not identified. We obtained only 250 completed records and after discarding those that obviously were inaccurate, there remained 164 records for evaluation.

Although we had the results of an earlier study (1945–46) on freshman women (5) for comparison,

TABLE 1

Food selection of men eating in different places (figures represent averages per week)

EATING PLACE	NUMBER*	PER CENT	MILK	VEGETABLES			FRUITS		WHOLE GRAIN PRODUCTS		MEAT, FISH, POULTRY, OR CHEESE	EGGS	DESSERTS
				Green and yellow	White potatoes	Others	Citrus and tomatoes	Other	Bread	Cereal			
			pt.	*servings*	*servings*	*servings*	*servings*	*servings*	*slices*	*servings*	*servings*	*number*	*servings*
Dormitory	72	44	12.40	8.46	8.32	2.86	3.08	6.04	31.47	6.46	13.16	4.10	16.79
Restaurant	66	40	7.95	7.26	9.45	2.98	2.81	4.52	22.36	2.11	14.19	3.41	14.41
Fraternity	9	6	11.75	10.78	8.00	2.00	1.33	7.76	25.44	3.44	12.78	2.56	17.89
Home	7	4	5.57	7.14	6.14	2.86	1.72	9.43	39.43	5.86	14.72	4.29	16.00
Combination home and restaurant	10	6	12.13	7.80	3.60	1.10	1.70	4.20	26.20	4.30	14.30	4.10	12.10
Standard†			7	7	7	7	7	7	21‡		12–14	3–5	

* Total number of men was 164.

† See references 6 and 7.

‡ Arbitrary standard proposed by the authors.

TABLE 2

Average weekly intake of food groups for men and women

SUBJECTS	MILK	VEGETABLES			FRUITS		WHOLE GRAIN PRODUCTS		MEAT, FISH, POULTRY, OR CHEESE	EGGS	DESSERT
		Green and yellow	White potatoes	Others	Citrus and tomatoes	Others	Bread	Cereal			
	pt.	*servings*	*servings*	*servings*	*servings*	*servings*	*slices*	*servings*	*servings*	*number*	*servings*
Men	10.34	8.88	8.55	2.91	2.86	5.29	27.44	4.05	13.70	3.66	15.69
Women	7.84	8.87	6.38	3.97	4.21	7.55	18.39	2.22	10.83	1.50	17.42
Standard*	7	7	7	7	7	7	21†		12–14	3–5	

* See references 6 and 7.

† Arbitrary standard proposed by the authors.

we felt that it would be desirable to study the diets of the freshman women again in 1948 to provide data for the comparison of the food intake of men and women for the same period. With that in mind, we obtained approximately 164 seven-day records from women in a freshman foods course following the procedure used with the men. It was learned in advance that most of the women were eating in the residence halls. Since a large number of the men ate outside, information as to place of eating was requested of them.

Evaluation was made of the daily diets as a whole and of the breakfasts separately. The latter step was for the purpose of learning whether a relationship existed between the adequacy of the breakfast and the adequacy of the total diet. Such a relationship had been found to exist in our earlier study to which reference has been made above. The adequacy of the diet in relation to place of eating was also considered for the men.

The revised Basic Seven (6) and "Diet Plans" of the Recommended Dietary Allowances (7) furnished the criteria for judging the diet as a whole. The breakfasts were evaluated according to the standard for an adequate breakfast employed by Jackson and Schuck in the 1945–46 Purdue study (5).

DISCUSSION OF RESULTS

In Table 1 is recorded the food selected during one week by 164 men grouped on the basis of where the meals were eaten. In all groups the weekly intake of milk; green and yellow vegetables; cereal and cereal products; and meat, poultry, fish, and cheese met the standard. All groups were deficient in the recommended number of servings of citrus fruits and vegetables other than green and yellow. Only those eating in homes and fraternities met the standard for fruits other than citrus. All groups except those living in fraternities met the recommendation for the consumption of eggs.

In Table 2 is given a comparison of the weekly food intakes of men with those of women. Both men and women had adequate intakes of green and yellow vegetables and milk, but the men consumed considerably more milk. This was true also of eggs, for which the women failed to meet the standard. The women, as were the men, were deficient in the intake of citrus fruits and of vegetables other than green and yellow. The women ate the recommended number of servings of fruits other than citrus, but this food group was short in the diets of the men.

TABLE 3

Percentages of breakfasts of different types for men and women

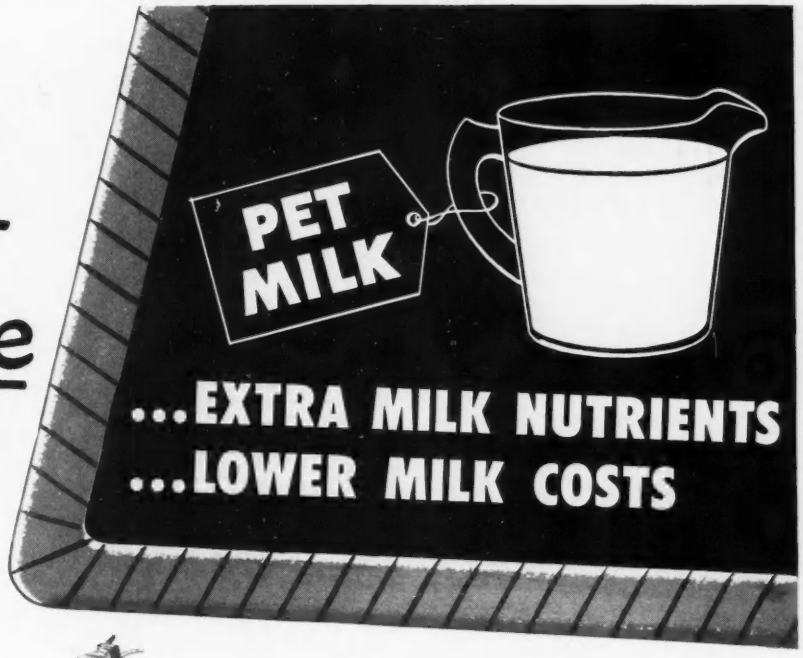
TYPE OF BREAKFAST	MEN	WOMEN	
		1948–49	1945–46
Adequate; contained all of recommended groups*	32.9	16.4	14.3
Contained three of recommended groups*	34.1	37.2	33.6
Contained two of recommended groups*	18.9	30.5	26.1
Contained one of recommended groups*	12.8	14.0	10.0
Coffee only, or no breakfast	1.2	1.8	16.0

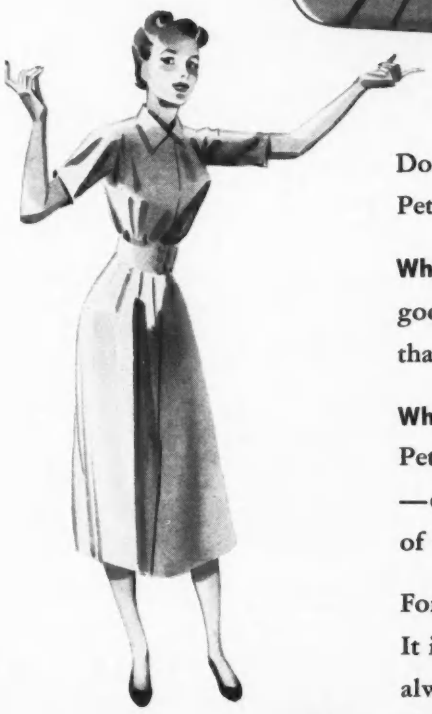
* Recommended groups: (a) fruit or fruit juice; (b) cereal with milk or egg; (c) milk or cocoa made with milk; (d) whole grain or enriched bread (or substitute) with butter. See reference 5.

A comparison of the breakfasts of the men and women (Table 3) showed that about twice as many men as women were consuming adequate breakfasts. The women in this study showed improvement in breakfast selection over those studied in 1945–46. This was true both with respect to the percentage of adequate breakfasts and the percentage of breakfasts omitted or consisting of coffee only. Comparisons for both men and women of the weekly food intakes of those omitting or having inadequate breakfasts with those having adequate breakfasts showed as in the earlier study that a direct relationship exists between the adequacy of breakfast and that of the diet as a whole. This relationship was also observed by Young and Storvick (3).

The results of the study indicate a need for im-

the single ingredient with double value





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provement in the diets of both men and women. The men, however, had better diets than the women. This is evidenced not only by the higher percentage of men who consumed adequate breakfasts but also by the smaller number of deficiencies in their diets as a whole. The men were deficient in only three food groups while the women failed to meet the standard in five food groups. The observations on the relatively better diets of the men are in accord with those of other investigators.

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New Appointments, Veterans Administration

The following hospital appointments of dietitians have been made by the Veterans Administration since July 1, 1949:

Name	Position	Location
	Boston Area	
Marian Bye	Staff Dietitian	Staten Island, N. Y.
Joan A. Cauley	Staff Dietitian	Buffalo, N. Y.
Florence V. Cavanaugh	Staff Dietitian	West Roxbury, Mass.
Ann L. Grant	Head Dietitian	Buffalo, N. Y.
Eleanor L. Harrison	Head Dietitian	Buffalo, N. Y.
Margaret M. Kavanagh	Head Dietitian	Buffalo, N. Y.
Elizabeth Kearney	Staff Dietitian	Staten Island, N. Y.
Kathleen M. Lewis	Staff Dietitian	Brooklyn, N. Y.
Catherine B. Lumpkin	Staff Dietitian	Rutland Heights, Mass.
Mary Murphy	Head Dietitian	Batavia, N. Y.
Gladys Sell	Chief Dietitian	Bath, N. Y.
	Washington, D. C. Area	
Anna B. Bryson	Staff Dietitian	Dayton, Ohio
Mary S. T. Dugan	Staff Dietitian	Coatesville, Pa.
Janet C. Etter	Staff Dietitian	Lexington, Ky.
Elizabeth Lehmann	Staff Dietitian	Dayton, Ohio
Naomi T. Lockard	Staff Dietitian	Martinsburg, W. Va.
Laura E. Pitman	Staff Dietitian	Cleveland, Ohio
	Atlanta Area	
Marion Perkins	Staff Dietitian	Jackson, Miss.
Mary Tope	Staff Dietitian	Memphis (Kennedy), Tenn.
	St. Louis Area	
Patricia Adam	Staff Dietitian	New Orleans, La.
Mary P. Blyholder	Staff Dietitian	Jefferson Barracks, Mo.
Dorothy Ellen Knapp	Staff Dietitian	New Orleans, La.
Jacqueline Laux	Staff Dietitian	Jefferson Barracks, Mo.
Edna E. Stinson	Head Dietitian	Ft. Bayard, N. M.
Helen A. Todd	Staff Dietitian	Topeka, Kans.
	Ft. Snelling, Minnesota Area	
Margaret King	Staff Dietitian	Minneapolis, Minn.
Helen Madigan	Staff Dietitian	Hines, Ill.
Cleva Montague	Staff Dietitian	Wood, Wis.
Marguerite Rossman	Staff Dietitian	Wood, Wis.
Annabelle Smith	Staff Dietitian	Minneapolis, Minn.
Anne Wallis	Staff Dietitian	Hines, Ill.
	San Francisco Area	
Anna L. Buckner	Staff Dietitian	Fresno, Calif.
Winifred A. Mackin	Staff Dietitian	Vancouver, Wash.
Lois Powell	Staff Dietitian	Van Nuys, Calif.
Elizabeth G. Sharkey	Staff Dietitian	Vancouver, Wash.
Norma Walker	Staff Dietitian	Portland, Ore.
Virginia R. Wildung	Staff Dietitian	Los Angeles, Calif.

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5. Help in accident elimination
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7. Efficiency in preparation
8. Adequate serving facilities
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11. Meets special requirements
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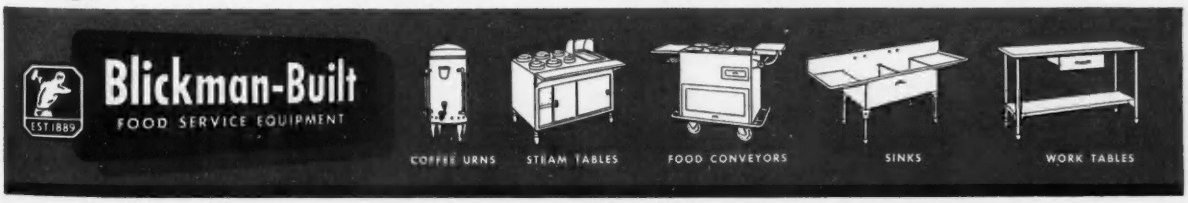

Book Reviews

Eating Together. By Camille Macaulay. New York: Farrar, Straus and Co., 1950. Cloth Pp. 419. Price $3.50.

This book is written for the diabetic person and is in two sections. The first section is an interestingly written text that offers realistic ideas and practical suggestions about the diabetic patient and his management. It reveals the many fears and questions that he has, but which we seldom hear expressed. For the diabetic person, it presents a positive outlook on life.

The second section deals with menus, and Mrs. Macaulay's idea of planning a variety of menus that can be used by the family with a diabetic member is certainly excellent. We all agree that the diabetic patient should be able, within reason, to choose and eat foods that are being served to other members of the family. The author includes menus with combination dishes. Each such menu is complete with special recipes and calculations of carbohydrate, protein, fat, and calories per serving. In this reviewer's mind a question was raised, however: Are individually and specifically calculated daily menus and recipes the most practical and simple approach to teaching most diabetic patients or should appropriate substitutions in terms of *food* equivalents be taught instead?

In order to use the menus in this book, the diabetic patient and the person planning his meals would have to be able to understand thoroughly the hows and whys of food composition, calculation, and substitution. Otherwise, the use of these menus with any necessary adjustments to be made in carbohydrate, protein, fat, minerals, and vitamin values, would be confusing. Even the simplest menus would need to be adjusted to another individual's diet prescription.

The analyses of fountain lunches and cocktail party food which Mrs. Macaulay gives and of the hows of dining in a restaurant are certainly information that the diabetic wants. However, the data must be evaluated if the book is to be used intelligently.

For the diabetic person who understands his diet, who is willing to spend time, and who will do the work required in planning and preparing these menus, this book has value. It loses its usefulness if he does not help plan the menus, but remains dependent on someone to do it for him.

The question of the weighed vs. the measured diet is again brought to mind. The author advocates the weighing of food.

In general, the academic material presented seems sound. —*June Morris Norman, Nutrition Clinic, University of Chicago Clinics.*

A Taste of Texas. Edited by Jane Trahey. New York: Random House, 1949. Boards. Pp. 303. Price $3.

Texans believe that Texas is a world in itself. However, their recipes mirror the state's history; they "reflect the influence of the Indian, the Spaniard, the Mexican, the Frenchman, and the flavor of the Deep South, and yet manage to keep the chuck wagon in good sight." In this cook book have been included recipes contributed by "Texans born, bred, by proximity, by adoption, and by osmosis and capillary attraction." All recipes were tested in the Home Economics Department of Texas State College for Women, Denton. In addition to being a collection of such recipes as "Mincemeat Mother-in-Law" (a dessert); "Pecan Whisky Cake"; "Lone State Apple Pie"; "Corsetier's Despair"; "Chili Frito Pie," and "Senator Claghorn's Omelet," the book also includes anecdotes, definitions, and humorous stories about the recipes which give an insight to their originators. The comic sketches which introduce each new division add to the interest of the book.

Soups; breads; cheese and egg dishes; fish, beef, pork, game, and poultry variations; sauces, particularly barbecue; salads and dressings; desserts of cakes, cookies, pies, and special assortments; and canapés receive due consideration, with almost all of the foods being highly seasoned.

Some of the recipes are a bit impractical for general home cooking, for instance, the "Hopkins County Stew" which requires 7 hr. to prepare and makes some 25 gal. However, such recipes do prove to be enjoyable reading.

A Taste of Texas would be an entertaining and valuable volume in the library of dietitians employed in various fields and to those who enjoy "something different."—*Betty Jean Ingram, Harris Hospital, Fort Worth, Texas.*

A Dictionary of Gastronomy. By André L. Simon. New York: Farrar, Straus and Company, 1949. Cloth. Pp. 264. Price $5.

The *Dictionary of Gastronomy* by André L. Simon, President of The Wine and Food Society of London, is one of the great classics in the realm of food and wine. Mr. Simon is accepted as *the* authority or last word on things generally pertaining to the growth, quality, purchase, service, and history of the wines of the world. His books on this subject are sought and read by all lovers of the oenological lore.

In *A Dictionary of Gastronomy*, the student will find not only wines, liquors, temperatures, glasses, bottles, growths, services, and accoutrements defined, but will also find the same excellent care given to hundreds of dishes belonging to the following headings, which make a well balanced menu: hors d'oeuvres, soups, sauces, gravies, eggs, fish and shellfish, entrées, roasts, vegetables, salads, desserts, and beverages.

In the entire field of foods and wines, there is no one that this reviewer knows who is more fitted to turn out a book such as this, and it is his wish that those who are interested in this particular field avail themselves of the opportunity and pleasure to check and digest and enjoy its contents. It is well printed and a real treasure and a joy to behold. Allow me to put this last phrase in as a commercial: "Go to your book seller today, turn over the pages of *A Dictionary of Gastronomy* slowly and lovingly, read, and you will purchase. It's a gem of gems—yes, a gem of the first water." —*Arnold Shircliffe, Manager, Wrigley Building Restaurant, Chicago.*

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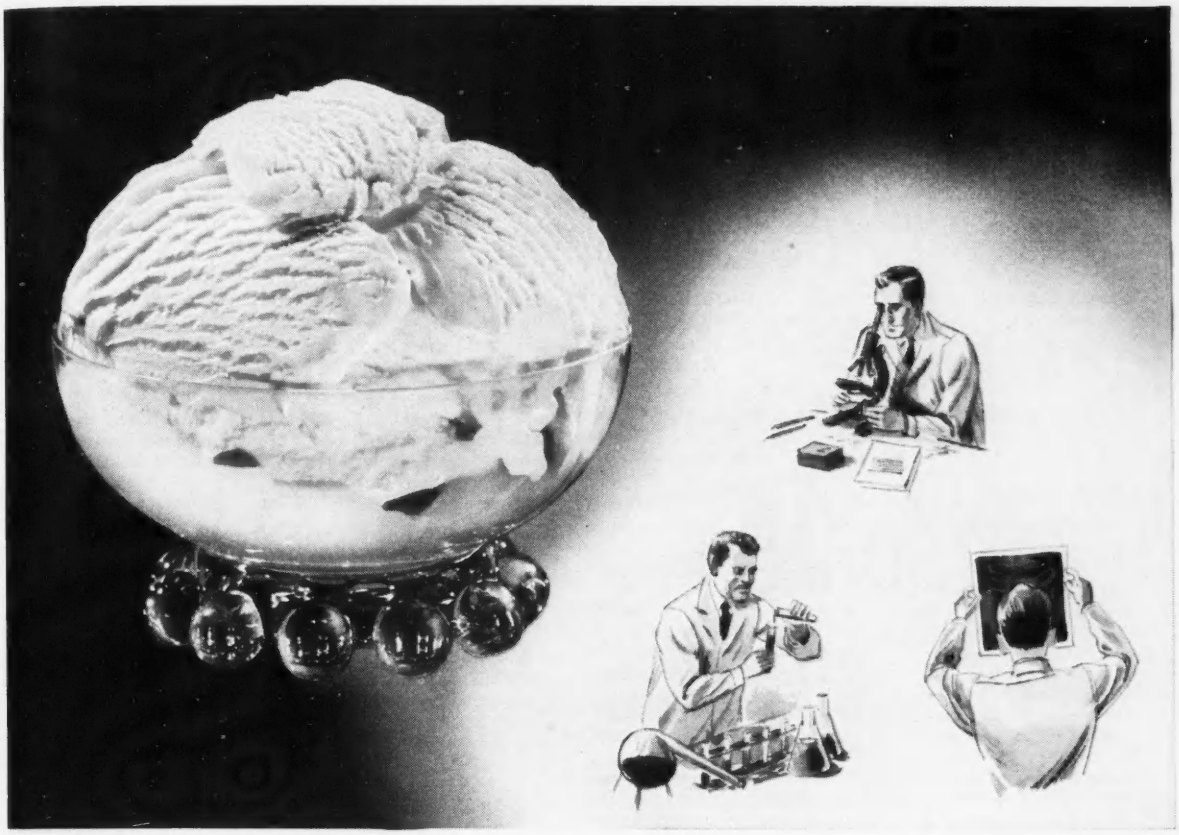

Research Seeks the Whole Truth About Ice Cream Each new study leads to a better understanding of ice cream's food value.

OUR knowledge of ice cream's nutritive content has been extended greatly in recent years. In 1948, the first complete analytical study of all the nutrients in an ice cream formula was published.* Prior to that time, the food value of ice cream was calculated from its individual ingredients. Comparison showed the analytical values to be similar to the calculated ones in most cases. It would appear, therefore, that the nutrients are little changed by the process of ice cream making.

Tests have been made, also, to determine the stability of vitamins in ice cream. Results show that 95% of the vitamin, riboflavin, is still present, even after experimental storage for periods as long as seven months. Furthermore, 84% of the original carotene content remains after the same period.** Carotene is the mother substance of Vitamin A—one essential for healthy eyes and skin.

An even more recent phase of ice cream research deals with the effects of ice cream's temperature on gastric function, blood pressure and pulse in young men students. X-ray showed that the coldness of ice cream had no effect whatever on emptying time of the stomach. It was also found that an ordinary serving caused no significant variation in pulse or blood pressure.***

*Dahlberg, A. C. and Loosli, J. K. *Nutritive value of commercial ice cream.* J. Am. Diet. Assn. *24*:20 (Jan.) 1948.

**Holmes, A. D., Kuzmeski, J. W. and Canavan, F. T. *Stability of vitamins in stored ice cream.* J. Am. Diet. Assn. 22:670 (August) 1946.

***Henschel, A., Taylor, H. L. and Keys, A. *Some responses of man to internal thermal stimulation.* Fed. Proc. 8:73 (March) 1949.

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Current Literature

Contributed by Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital, Baltimore; Janet Engebretsen, University of Chicago Clinics; Hermia M. Handt, Veterans Administration Hospital, Hines, Illinois; Pauline Kegereis, Children's Mercy Hospital, Kansas City, Missouri; Berdena Rosenow, University of Kansas Medical Center, Kansas City, Kansas; Mildred Bonnell and administrative interns, University of Washington, Seattle; and the Journal staff.

THE AMERICAN JOURNAL OF DISEASES OF CHILDREN

Vol. 79, March, 1950

* Hypervitaminosis A. C. T. Fried and M. J. H. Grand.—p. 475.

Hypervitaminosis A. Hypervitaminosis A occurs in late infancy and early childhood. Of two cases reported both were boys two and three years old, one of whom had an abnormal appetite for butter. Clinically anorexia appeared with loss of weight, extreme irritability, low grade fever, pruriginous rash, and sparseness of hair. High levels of vitamin A in the blood serum were noted along with changes in the long bones; there was localized swelling and pain in these bone areas. Recovery occurred when vitamin A was withdrawn from the diet. The regulation of the blood level of vitamin A is believed to be governed by the liver. Its capacity to store this vitamin is enormous, as it can maintain 95 per cent of the total vitamin A reserve of the body. This storage in the liver is considered harmless. If the amount of ingested vitamin A or vitamin A concentrates should overwhelm the capacity of the liver to remove vitamin A from the blood, then the result may be toxic. However, there seems to be some factor involved in the production of toxic symptoms other than excessive dosage and duration of administration; this factor may reside in the liver.

ARCHIVES OF INTERNAL MEDICINE

Vol. 85, March, 1950

* Is there a relation between diet and blood cholesterol? C. F. Wilkinson, E. Blecha, and A. Reimer.—p. 389.
* Hypermetabolic states without hyperthyroidism (nonthyrogenous hypermetabolism). S. Silver, P. Poroto, and E. B. Crohn.—p. 479.

Diet and Blood Cholesterol. Recent literature has brought up the question of how important the amount of dietary cholesterol is in relation to the blood cholesterol. A study was conducted on ninety-one people, eighty-three of whom submitted satisfactory data for conclusions. The intakes and food habits were recorded. The intake of cholesterol in the diet did not affect the total serum cholesterol. It was concluded that when hypercholesteremia was due to essential familial factors, no adverse prognosis was predicted. Hypercholesteremia itself has no demonstrable effect on life expectancy.

Nonthyrogenous Hypermetabolism. Until fifty years ago all cases of elevated basal metabolic rate were attributed to hyperthyroidism. Now it is generally known that some of the disorders causing hypermetabolic states are: leukemia, multiple myeloma, cardiac failure, malignant tumors, Paget's disease, Hodgkins' disease, and severe anemia. More than eighty-nine patients were observed who had one of the above mentioned diseases without the clinical picture of toxic goiter. The mechanism of hypermetabolism is not known, but it is clear that it differs widely from hyperthyroidism.

THE CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 62, March, 1950

* Fat emulsion for intravenous nutrition. Editorial.—p. 287.

Fat Emulsion for Intravenous Nutrition. One of the problems of total intravenous alimentation is that sufficient calories to meet daily requirements cannot be administered; 2000 cc. of 10 per cent glucose solution and 1000 cc. of 5 per cent protein hydrolysate preparation provide only approximately 1000 calories and 50 gm. protein. In many patients, also, it is not possible to administer large quantities of intravenous fluids daily, due to congestive heart failure, decreased renal function, or edema. An intravenous fat would seem to answer part of the problem. Recently, Geyer and his co-workers have developed Emulsion 41 consisting of 15 per cent cocoanut oil, 4.3 per cent dextrose, and a combination of 0.5 per cent soybean phosphatides and 1 per cent polyglycerol esters as stabilizers. Observations on the intravenous administration of the fat emulsion to eleven patients indicated favorable clinical response, the prevention of weight loss, and the maintenance of positive nitrogen and potassium balance. Emulsion 41 is still not considered completely suitable for clinical use, because of the development of pyrogenicity after approximately four weeks.

ENDOCRINOLOGY

Vol. 46, February, 1950

* Alloxan administration in the guinea pig: a study of the histological changes in the islands of Langerhans, the blood sugar fluctuations, and changes in the glucose tolerance. D. D. Johnson.—p. 135.

Alloxan in the Guinea Pig. Guinea pigs were injected with alloxan in dosages ranging from 100 to 300 mg. per kilogram body weight. Blood samples for blood sugar analysis were obtained at intervals up to 96 hr. later; glucose tolerance tests were also performed. Sections of the pancreas, studied microscopically, showed necrosis of the B cells in the islands of Langerhans. Recovery of islet tissue occurred within four days, due to formation of new islets composed mainly of B cells. Blood sugar changes following injection of alloxan were hyperglycemia, followed by hypoglycemia, and a second temporary hyperglycemia. Glucose tolerance was impaired for several weeks.

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THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 142, April 8, 1950

* Nutrition problems of geriatric medicine. E. J. Stieglitz.—p. 1070.

Vol. 142, April 15, 1950

* Choline chloride in the treatment of one hundred patients with diabetes mellitus. E. W. Gates.—p. 1136.

The vitamin D milk program of the Council on Foods and Nutrition of the American Medical Association. Council on Foods and Nutrition.—p. 1144.

Vol. 142, April 22, 1950

* Life situation, emotions and hyperinsulinism. S. A. Portis.—p. 1281.
* Iron and copper. W. J. Darby.—p. 1288.

Vol. 142, April 29, 1950

Insulogenic lipodystrophies. C. P. Lamar.—p. 1350.

Vol. 143, May 6, 1950

* Carbonated beverage dispensing machines in school buildings. J. R. Wilson.—p. 24.

Nutrition and Geriatric Medicine. Many disturbed functions in geriatrics are intimately related to nutrition. Generalizations on this subject are dangerous for chronologic and biologic age are not synonymous. Malnutrition may be endogenous as well as exogenous and include excesses as well as deficiencies. When of long duration, even the *small* defects in dietary habits become important. Wise nutrition is a powerful tool for the attainment of vigor in later years. Essentials of good nutrition in geriatric medicine must include: (a) plenty of water; (b) controlled caloric intake when necessary; (c) protein, carbohydrate, fat, and mineral balance according to individual needs; (d) vitamins supplemented where indicated; (e) adequate bulk to prevent constipation but no roughage; and (f) cautious use of accessories, such as condiments and spices in excessive amounts, for they are not only irritating to the intestinal tract but they contribute to vascular and renal irritation. Coffee and tea are not contraindicated except in specific cases. Alcohol, judiciously used, is sometimes helpful in the management of aged patients.

Choline Chloride and Diabetes Mellitus. One hundred diabetic patients ranging in age from sixteen to eighty-seven years were given 1 gm. choline chloride four times daily under controlled conditions. No beneficial results were noted. This daily dose was considered to have toxic effects in nine patients; five of those had severe edema of the lower extremities which disappeared when the drug was discontinued.

Emotions and Hyperinsulinism. The assumption was made that hypoglycemia in psychoneurotic patients is due to long-continued stimulation of the right vagus nerve. Intravenous glucose tolerance tests were performed on 929 patients, some suffering from fatigue, others from psychosomatic problems. The fatigued patients showed hypoglycemia which was presumably related to some emotional situation. Dietary management producing slow continuous absorption of carbohydrate instead of quick sugar was not sufficient; atrophine was given to prevent emotional stimuli from reaching the pancreas. Extreme care was used in administering the drug, because it could precipitate acute glaucoma in elderly patients. Improvement of patients on this therapeutic regimen was striking.

Iron and Copper. Since the metabolism of iron in man has been studied with radioactive iron, conclusions based on former observations on lower animals no longer seem valid for man. Ferrous iron rather than ferric iron is most readily absorbed by man, whereas both are absorbed equally well by dogs. Iron deficiency in the infant is most often of dietary origin; in adults it is from chronic blood loss rather than from a single massive hemorrhage. The anemia of copper deficiency is a reflection of the inability to mobilize iron for hemoglobin. The human diet ordinarily contains 2 to 4 mg. copper per day and excesses beyond needs are excreted in the bile and possibly by the intestinal wall. There is some possibility that infants restricted to milk alone may have signs of copper deficiency, but copper deficiency in adults has not been proved.

Carbonated Beverages in Schools. The Council on Foods and Nutrition wishes to go on record as opposing the sale of carbonated beverages on school premises. Such sale lessens the purchases of milk and other fundamental foods, especially by younger children.

THE JOURNAL OF CLINICAL INVESTIGATION

Vol. 29, March, 1950

The insulin tolerance test in patients with essential hypertension. I. A. Mirsky, S. M. Kaplan, C. J. Podore, and R. H. Broh-kahn.—p. 297.

* Urinary excretion of amino acids in liver disease. M. S. Dunn, S. A. Kawaie, H. L. Yeh, and H. Martin.—p. 302.

Amino Acid Excretion in Liver Disease. This article reports a study of the urinary excretion of amino acids by twenty-five patients, the majority of whom had subacute or chronic cirrhosis. A majority received the same high-protein, high-carbohydrate, low-fat diet. The high urinary values were found in patients with acute, subacute, or chronic stage of cirrhosis associated with hepatocellular damage and jaundice. Low urinary values occurred in patients with subacute, chronic, or healing liver disease without significant jaundice at time of study. The urinary excretion rates in general were not of prognostic significance.

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

Vol. 19, November, 1949

* Some aspects of vitamin B_2 complex and its deficiency in man. B. B. Mukheree.—p. 42.

Vol. 19, December, 1949

* Diarrhoeas in the tropics—etiological aspect. G. C. Kanjilal.—p. 88.

B_2-Complex and Its Deficiency. The term "vitamin B_2-complex" was used because the deficiency is often due to the lack of several of the B_2 factors. The patient usually responds better to treatment with all known B_2 vitamins than with one alone, and the influence of one vitamin on the physiologic functions of the others is not yet understood. The deficiency may be brought in several ways which are given. Toxamins, such as the factor in maize which antagonizes niacin, avidin in raw egg-white which antagonizes biotin, and anti-vitamins, such as the sulphonamide drugs, influence vitamin deficiency. The constituents of vitamin B_2-complex are riboflavin, niacin, folic acid, adermin or pyridoxine, pantothenic acid, choline, para-aminobenzoic acid, biotin, inositol, and B_{12}. A paragraph about each summarizes what is known at the present time. Symptoms of B_2-complex deficiency, the relation of its deficiency to other diseases, and treatment are given in detail.

Etiology of Diarrhea in the Tropics. Predisposing factors are climatic influences, such as sudden chill or heat-stroke, altitude, deficiency states, and achlorhydria. Primary causes of acute diarrheas are toxic, dietary, or infectious. Gastrointestinal allergy, food containing large amounts of cellulose, meat which has been long in storage, excessive condiments, over-indulgence in alcoholic beverages, and possibly the use of aluminum or new copper vessels may cause diarrhea. Infections from spoiled foods are due to the *Salmonella* group of organisms. Virus infections and the use of certain medicines, such as drastic cathartics of kala-azar, lead to acute diarrhea. Secondary or constitutional causes of acute diarrhea are any infectious diseases which cause severe inflammatory changes in the stomach and intestines, i.e., typhoid fever, cholera, measles, influenza, severe pyemias, and septicemias. Causes of chronic diarrheas are: protozoal diseases, helminthic infections, bacterial diseases, nutritional diseases, virus diseases, spirochetal diseases, and metazoal disease.

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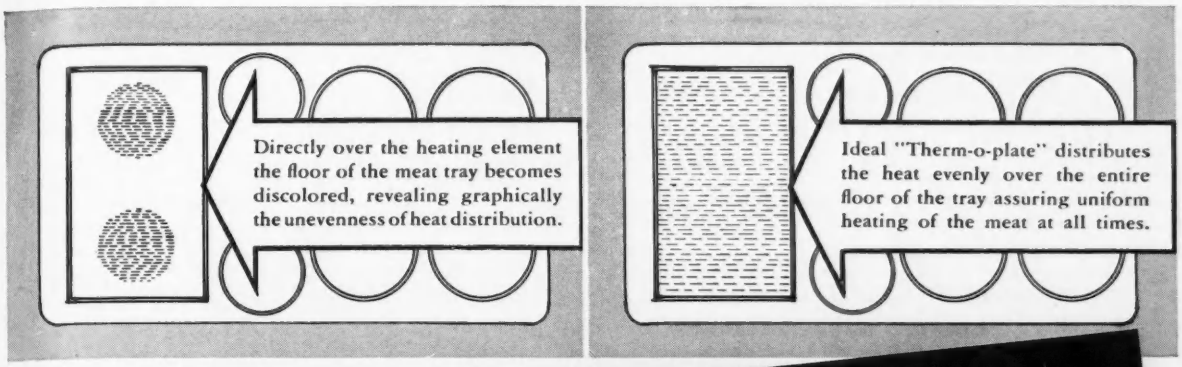
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THE JOURNAL OF NUTRITION

Vol. 40, March 10, 1950

* Vitamin E content of foods. P. L. Harris, M. L. Quaife, and W. J. Swanson.—p. 367.
* The prevention of caries in the Syrian hamster with sodium oxalate. R. M. Twedt and F. A. Cajori.—p. 393.
Comparative studies in niacin metabolism. The fate of niacin in man, rat, dog, pig, rabbit, guinea pig, goat, sheep, and calf. W. A. Perlzweig, F. Rosen, and P. B. Pearson.—p. 453.

Vol. 40, April 10, 1950

* Human milk studies. XXVII. Essential amino acids in human colostrum and transitional milk. S. Miller, V. Ruttinger, M. M. Rutledge, R. Frahm, S. Maurer, E. Z. Moyer, M. Kaucher, and I. G. Macy.—p. 499.
The retention of fluorine when fed as bone and as sodium fluoride. S. H. Jackson, F. F. Tisdall, T. G. H. Drake, and D. Wightman.—p. 515.
* Vitamin A utilization studies. III. The utilization of vitamin A alcohol, vitamin A acetate and vitamin A natural by humans. E. F. Week and F. J. Sevigne.—p. 563.

Vitamin E Content of Foods. Foods purchased on the open market in Rochester, New York, were analyzed for total tocopherols and for alpha-tocopherol. On the basis of these analyses, the average per capita consumption of vitamin E in this country is estimated as 14 mg. *d* alpha-tocopherol daily. Certain vegetable oils are the richest dietary sources of vitamin E. Cereal products and eggs are next. The value of the cereal products as a source depends upon the extent and severity of the milling process. Vegetables supply little of the daily intake of vitamin E. Animal products are rather poor sources of vitamin E because of their quite low and variable concentration of total tocopherols. The tocopherol concentration in animal products is probably directly proportional to the level of vitamin E in the diet of the animals, and inversely to the severity of processing and length of storage.

Prevention of Caries with Sodium Oxalate. Young Syrian hamsters developed caries when placed on a high-carbohydrate diet. The teeth of the male hamster exhibited a greater degree of caries activity than the teeth of the female. A 0.5 per cent level of sodium oxalate added to the cariogenic diet protected the animals from caries. Chemical analysis of the tooth substance revealed significant amounts of oxalate had been incorporated into the teeth. A discussion of the protective action of oxalate is presented.

Amino Acids in Human Colostrum. Microbiologic methods were used to determine leucine, isoleucine, valine, histidine, lysine, methionine, phenylalanine, arginine, threonine, and tryptophan in milk of ten healthy women during the first ten days post-partum. The amino acid concentrations varied with the subject and the day post-partum and did not parallel changes in volume of secretion or concentration of total solids. Total nitrogen and amino acid concentrations followed the same general pattern with highest values occurring on the fifth, sixth, seventh, or eighth day post-partum. The ratios between the nitrogen of the essential amino acids and total nitrogen were not consistent.

Vitamin A Utilization Studies. Determination of the blood serum vitamin A level on eighteen men and seven women was used as criterion for the relative utilization of the alcohol, acetate, and natural ester forms of vitamin A. After the administration of 134,000 mcg. contained in 50 gm. margarine, vitamin A alcohol showed greater biologic efficacy than vitamin A acetate for the male subjects. Vitamin A acetate was, in turn, superior to the natural ester forms. Vitamin A alcohol produced a greater biologic response than vitamin A acetate for the female group. Comparison of the alcohol form with a distilled natural ester preparation showed no significant difference in utilization in the female. After ingestion of high dosages of the vitamin, the increased vitamin A in the blood serum was present as the ester, irrespective of the chemical form of the vitamin administered.

PSYCHOSOMATIC MEDICINE

Vol. 12, January–February 1950

* Personality factors in duodenal ulcer. M. Brown, T. J. Bresnahan, F. C. R. Chalke, B. Peters, E. G. Poser, R. V. Tougas.—p. 1.

Duodenal Ulcer. The Rorschach Test was administered to twenty-five patients with duodenal ulcer and twenty-five cases with non-gastrointestinal diseases. Responses were compared and statistically evaluated. The data suggest that ulcer patients tend to deal with environment at an impulsive, emotionally immature level leading to conflict in the area of social, interpersonal relationships.

PUBLIC HEALTH REPORTS

Vol. 65, March 17, 1950

Education and use of sanitary engineers.—p. 372.
Recovery of *Brucella melitensis* from the hog. S. R. Damon and J. H. Scruggs.—p. 374.

Vol. 65, March 31, 1950

* Nutrition programs in state health departments. Subcommittee of the Committee on Diagnosis and Pathology of Nutritional Deficiencies.—p. 411.

Vol. 65, April 21, 1950

* Experimental passage of *Salmonella oranienburg* through roaches. T. A. Olson and M. E. Rueger.—p. 531.

Nutrition Program. On the basis of existing conditions of malnutrition, the ultimate aim of a nutrition service in a public health department should be the attainment of optimal nutritional status by the entire population. In a report to the Food and Nutrition Board of the National Research Council are enumerated all the phases of the responsibilities of a nutritionist from hospital consultation to child feeding programs. The need for a physician in public health nutrition is emphasized because he can recognize many nutritional deficiencies through their clinical manifestations. The role of the nutritionist in a state health department is presented in the thirty-four pages of this article so that each nutritionist will know better what she can do and every public health official will realize how he can let a nutritionist help him.

Food Poisoning Through Cockroaches. To evaluate the role of cockroaches as carriers of food poisoning, a series of transmission experiments was undertaken with *S. oranienburg* as the pathogen and three common species of household roaches as potential carriers. Survival of the pathogen in the insects was determined by an examination of the feces. It was found that under the conditions of these experiments, the test strain of *Salmonella* could survive for ten days in the American roach, for twelve days in the German roach, and for twenty days in the Oriental cockroach. In experiments with the American roach, carmine and acriflavine were eliminated from the digestive tract of roaches approximately six days after feeding, indicating roughly the time required for mechanical clearing of the digestive system. Fecal pellets from an experimental roach have remained infective for a period of 199 days at room temperature, while organisms from a culture have survived on glass surfaces for thirty-four days, on ordinary soda crackers for eighty-eight days, and on corn flakes for sixty-two days.

AMERICAN RESTAURANT MAGAZINE

Vol. 34, April, 1950

* Color. J. A. Cline.—p. 37.
* O'Meara tells St. Louis. S. T. Murray.—p. 41.
Meals that go with sunshine and spring. L. D. Freeman.—p. 43.

Eye Appeal in Food. Appetite appeal of foods depends mainly on the color and appearance of the foods assembled on the plate. For example, green foods, such as peas, beans,

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parsley, peppers, watercress and pickles, will give a dish character and interest. Yellow, red, and orange may be used, but generally speaking not blues. Here are many suggestions for getting color into food combinations, together with color-tested recipes and menus.

Service Personnel Training School. A school for service personnel was held early in the year by the St. Louis Restaurant Association. Sessions were held both in the afternoon and evening for a five-day period to accommodate the working schedule of employees. Techniques of good food service were emphasized. Instruction was given for such procedures as serving a cup of coffee and using a hand towel. Certificates of attendance were presented to all employees who attended all five days of the sessions.

COLLEGE AND UNIVERSITY BUSINESS

Vol. 8, April, 1950

* Portion control from purchasing point of view. D. W. Chapman.—p. 45.

Portion Control. Here is described the program which Purdue University is following for the control of portion costs. The approach has been through predetermination of needs, completing specifications, setting up a competitive buying system, and checking and inspection as goods arrive. This program insures correct purchase of the food which will ultimately reach the table.

As a result of this program, facts have been discovered which will help others with the control of portion costs.

FOOD INDUSTRIES

Vol. 22, April, 1950

* Meats for the military: 3 ways we can help. B. W. Gardner, Jr.—p. 53.
* Time-motion improvements come faster with films. Gerald Nadler.—p. 36.
* Sure-fire guide for spotting plant pests. II. J. V. Blankmeyer.—p. 47.
* It's a chemical, true enough—but foods are better with it. R. E. Morse and T. W. Schilb.—p. 81.

Advantages of Motion Pictures in Industry. The canner is too busy to do much about methods during the season when his only aim is to get the product in the can, but taking motion pictures of the operation during the regular season will permit analysis of plant performances at a later date. The detail of motion pictures shows both the inefficient and adept worker—thus making possible an improved method for all the workers. Motion pictures can be used to train new employees in correct methods; they can supply visual records for job analyses and time study rates. The case of picking up ears of corn was illustrated. Three methods were analyzed by motion pictures. By use of the films, plus operation charts and micromotion studies, the best method was selected. It greatly reduced fatigue and backaches of workers and increased production.

Preventing Infestation in the Bakery. A thorough check plan is explained to prevent infestation in the bakery. Every piece of equipment and every room in the bakery is a target of inspection. Samples of flour from the corners of the blender and dump bins should be tested for insects. Incoming flour and the cars in which it is shipped should be inspected. A sifter with a 50-mesh screen between blender and flour-storage bin to ascertain quality of incoming flour will prevent contamination of flour-storage bins and elevators before insects and larvae can enter flour-handling equipment. Breeding places for insects are corners, floor sweepings, sacks, and cartons. Cracks, pulleys and belts, screws in machinery should also be checked in the mixing room and make-up room. Garages, maintenance shops, waste chutes, and garbage pails should not be overlooked. The author contends that control of pests in a plant consists of 85 per cent good housekeeping and less than 15 per cent dependence on insecticides and fumigants.

Phosphates Improve Foods. The article explains the benefits of adding chemicals to foods to retain original nutrients and to return nutrients removed during processing. Phosphates are used in bakery goods to improve volume and texture and fortify refined foods with mineral and vitamin supplements. In the fruit juice industry, phosphates produce better color, viscosity, and yield. Sodium hexametaphosphate prevents tough pea skins in canning. Disodium phosphate is added to cheese to prevent "oiling-off" and promote emulsification. Other types of phosphates act as antioxidants in fats and "anticakes" in salt and sugar. The author points out that the Food and Drug Administration has no objection to adding a useful chemical compound to a food product, if it is safe and does not conceal inferiority.

FOOD PROCESSING

Vol. 11, April, 1950

Frozen milk concentrate.—p. 38.
* New food snack from broken rice. p.—39.

New Snack Food. A product made from broken rice, which allows an outlet for mill fractions, is a new food snack speciality. The new product has a lower residual oil content than potato chips or corn chips and has not too great an affinity for moisture. Pleasing flavor variations are obtained by the addition of rice bran and rice polish.

HOSPITALS

Vol. 24, April, 1950

* Controlling food service through distribution by weight. M. D. Kalsem. —p. 103.

Controlling Food Service. In the problem of food portion control, baked dishes, meats, potatoes, vegetables, and other items comprising most of the main meal are the most difficult to standardize. In Cook County Hospital, Chicago, this problem was solved by the use of dial scales. The ward supervisor orders her food in specific amounts and takes into account the different type dietaries she has on her ward. All ward orders are summarized by administrative dietitians, listed on separate sheets for cooks, and correlated with standardized recipe for production of each food item. In the kitchen the dial scales made possible rapid food service with accuracy. Since most utensils are of uniform size and weight, the beam can be set for the weight of pans and the dial used for weighing food items. Because these scales have the weighing mechanism enclosed, the parts are not affected by steam, moisture, and food particles that may be splashed during weighing.

HOTEL MANAGEMENT

Vol. 57, April, 1950

How to buy and care for upholstery fabrics.—p. 54.
* How to merchandise popular dishes.—p. 60.

Merchandising Popular Dishes. Improved merchandising of food can encourage the consumption of more substantial and better balanced meals. Interest in the next day's dishes can be aroused by placing a notice at the bottom of the menu. Building a reputation on a popular dish is a good feature. Providing a short story about the featured item is very effective. Featuring traditional dishes and placing them in a particular spot on the menu is good. Ready-to-serve dishes are popular to the hurried customer.

INSTITUTIONS MAGAZINE

Vol. 26, April, 1950

* Machines make jobs easier; reduce payrolls.—p. 1.
* Mechanical miracle doubles feeding capacity.—p. 1.

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The outstanding feature of this product is its exceptionally high protein content . . . more than 92% of the total solids supplying a rich source of amino acids, the essential building blocks of body proteins. (1)

Noteworthy is the high content of Animal Protein Factor and Vitamin B_{12}. Recent work has indicated that B_{12} may have special value in childhood nutrition. (2)

Another feature of BABY FOOD Strained Tuna is the *high fluorine content.* This element has recently gained special recognition, as it has been shown that satisfactory quantities of fluorine consumed during the *development of teeth* help protect against future dental decay. The amount of fluorine in most foods is usually lower than apparently required, and therefore BABY FOOD Strained Tuna should be a welcome addition to the diets of infants and young children. (3)

Because of its pleasant taste and smooth texture BABY FOOD Strained Tuna is well suited for dietary management of conditions where a *soft, low-residual diet* is indicated.

1. Dunn, M. S. "The Nutritional Value of Fish Proteins." (Institute of Food Technologists, San Francisco meeting, July, 1949.)

   Geiger, E. "Nutritive Value of Fish Protein" (in "Progress of the Chemistry of Organic Natural Products" Ed. by L. Zechmeister, 5 275 [1948]).

2. Wetzel, N. C., W. C. Fargo, J. H. Smith and J. Helikson—"Growth Failure in School Children as Associated with Vitamin B_{12} Deficiency-Response to Oral Therapy." (Science, 110, 651 [1949].)

3. Editorial, "The Lancet" (London) Oct. 8, 1949, Page 664.

   McClure, F. J., "Fluorine in Foods," Public Health Reports, 64 1061 (1949).

Further information will be gladly supplied upon request.

VAN CAMP LABORATORIES

Division of Van Camp Sea Food Co., Inc. Terminal Island, California

* New techniques reveal full range of employee abilities. R. R. Gaines.—p. 51.
* Get food, service satisfaction from qualified waitress.—p. 74.
* This is the way they washed and dried their dishes.—p. 132.

Machines Simplify Work and Cut Costs. This article explains how costs can be reduced and efficiency increased by an initial expense to install machines in food service. Conveyers for transport of materials, equipment, and foods are time savers. Rapid portioning devices save time, and redesigning work spaces saves unnecessary steps. Time and motion studies showed the following time savers: Both hands should begin and complete motions simultaneously and should not be idle at the same instant. Balance can be created when both arms move in opposite and symmetrical directions. Motions of a task should be limited to as few as possible and should be made within the worker's radius so that he will not be fatigued. Hands should not do what the feet can do. Faster motions should be taught first. Motions of different parts of the body should be restricted. Sequences of motions should build rhythm and use curved line instead of straight line motions. New methods of serving cocoa and wrapping silverware illustrated the benefits of the time and motion studies.

New Food Service at College. A description of the new food services including floor plans and illustrations of the kitchens in the new Food Stores Building at Pennsylvania State College is the material explained in this article. The system feeds 3800 people in a $2 million operation with no increase in costs of labor. The new operation is described as a "mechanical miracle" because maximum use of machinery is employed. Increased enrollment prompted school officials to reorganize the campus food services. The centralized food storage and processing building has made space available in residence halls. The purchasing procedure is more efficient because specifications can be carefully drawn and inspection at point of delivery can be rigidly controlled. Centralized records assure uniformity of method and accuracy. Extensive facilities include quick freeze units, storage rooms, bakery, shipping area, overhead tracks to move foods, and a butcher shop.

Getting the Employee's Best Effort. The worker's attitudes toward his job, fellow workers, and his supervisor should first be studied to improve efficiency. A frank, but discreet questionnaire survey can reveal a worker's attitudes, but it does not determine basic causes for them. The use and interpretation of such a questionnaire requires fairly well-trained technicians. Specific questions are listed to tell whether a worker can do a better job in a different capacity or in his present operation. When an institution is going to reorganize on a large scale, steps to be taken are: determine the general nature of the new functions, identify new jobs, and analyze new job operations. The final step is to build a Job Skills Chart and an Employee-Skills Chart which are both illustrated in the article.

Waitress Must Sell Food and Service. Because the waitress is the representative of the restaurant, she is actually a saleswoman. She should be well-acquainted with the menu, including prices, choices, how dishes are prepared, meaning of different food terms, approximate preparation time of the dishes, and special services of the establishment. A pleasant reception, careful service during the meal, and courteous treatment as patrons leave adds up to pleasing them by good salesmanship.

History of Dishwashers. This article traces the history of dishwashing methods, beginning in 1903. At the turn of the century, dishwashing in giant luxury hotels was a process of lowering dishes into hot solutions of potash and clean rinsing water so that they would dry instantly without wiping. The first dishwasher was reported when C. A. Haskins invented a crude wooden contraption in 1879. The evolution of the mechanical dishwasher is followed up to the modern version with conveyor belt.

JOURNAL OF HOME ECONOMICS

Vol. 42, April, 1950

* Our public relations depend on you. E. E. Elliott.—p. 266.
Objectives for graduate preparation of public health nutritionists. E. Robb. —p. 277.

Public Relations. The decrease in enrollment of students in home economics in colleges makes it necessary to bring about an improvement in public opinion. A public relations program is outlined for home economics at college level which, by the cooperative efforts of staff and students, may be executed to bring about this desired improvement in public opinion.

QUICK FROZEN FOODS

Vol. 12, April, 1950

* Is frozen milk concentrate next?—p. 37.
* Best sellers in frozen foods.—p. 48.

Is Frozen Milk Concentrate Next? Recent statements by officials of the frozen food industry seem to indicate that the marketing of frozen concentrated milk is in the stage of evolution that frozen concentrated citrus juice was in 1943. Technological barriers remaining to be overcome are the tendency of the product to flake or separate on reconstitution and the development of cooked off-flavors on storage. The economic pressure behind the research into the problem stems from the fact that fluid milk can be produced at lower cost during the spring and summer months, which results in considerable quantities of milk that must be processed into various forms to be available during the period of short supply. The non-milk producing areas of the country are considered to offer the most likely markets for the sale of frozen milk concentrate. The military forces of the nation are already using frozen milk, but the acceptability of the product to the consumer will depend primarily on its ability to compete with fluid milk on a price basis. It remains to be seen whether the first frozen milk concentrate will be processed by a frozen food or dairy industry, or whether the combined efforts of both will be needed.

Best Sellers in Frozen Foods. A report by the distributors of frozen foods states that orange juice concentrate led the frozen food sales during March despite the competition of seasonal fresh fruit and rising prices. Strawberries were the only other fruit high in sales value. Green peas were again the best seller in the vegetable field. Broccoli and Lima beans placed second in sales for the month.

WHAT'S NEW IN HOME ECONOMICS

Vol. 14, April, 1950

How to manage a school lunch program and like it. M. M. Morris.—p. 116.
* Choosing from cheeses.—p. 43.

Choosing from Cheeses. Although there are some four hundred cheeses, counting all variations, most people think in terms of just three—American, cream, and cottage. Part of the answer is in the reluctance of many people to spend money for a food they have never tasted or even to sample an unfamiliar food served at another's home. There are two large groups—natural and process cheeses. Some natural cheeses are packaged at the factory in small sizes for consumers' purchase. Among these are Camembert, Edam, Gouda, Limburger, and cream cheese. Process cheeses are made by blending new and aged lots of the same or different varieties of natural cheese. Processed cheeses have such flavors as American cheese—plain, pimiento, smoked, or bacon; cream cheese with Swiss, Roquefort, Limburger, relish, or pineapple. With all these types of cheeses, the home economist can use more imagination in choice of cheese, and therefore in menu planning.

Whenever a carbohydrate supplement is indicated

KARO Syrup is a perfect carbohydrate . . . a mixture of dextrose, maltose and dextrins

FOR INFANT FEEDING physicians have prescribed KARO® Syrup for 30 years, recognizing it as an ideal milk modifier. For all types of formulas ...for all infants; well or sick.

FOR HIGH CARBOHYDRATE THERAPY, KARO, being a mixture of dextrose, maltose and dextrins, can be given in larger amounts than any single sugar.

IN GERIATRICS, carbohydrates fill an important function. KARO Syrup is easily digested, well tolerated . . . resistant to intestinal fermentation. It is completely absorbed and utilized.

P.S. KARO Syrup is readily available in case lots, from any food wholesaler.

Medical Division

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News Notes

Nutrition Committee for Public Health Nursing. The National Organization for Public Health Nursing, Inc., has appointed a Nutrition Advisory Committee to its official publication, *Public Health Nursing*. Its purpose is to present more articles on nutrition and techniques of application to help the public health nurse integrate nutrition into her teaching program and to develop cooperation and understanding between nutritionists and public health nurses. Members of the committee are: Frances M. Coles, Nutritionist, Visiting Nurse Association, New Haven, Connecticut; Dorothy Hacker, Nutrition Consultant, Division of Maternal and Child Health, New Mexico Department of Public Health, Santa Fe; Catherine Leamy, Regional Nutrition Consultant, Children's Bureau, New York City, Dr. Miriam Lowenberg, Nutrition Supervisor, Rochester Child Health Project, Rochester, Minnesota; and Chairman of the Committee, A. June Bricker, Director, Home Economics Bureau, Metropolitan Life Insurance Company, New York.

Army Commissions for Medical Department Women. Former Army and Air Force Medical Department women, including dietitians who served during World War II, are now eligible for regular commissions under Public Law 514 effective May 16. Reserve dietitians on extended active duty with the Army or Air Force, civilian dietitians holding reserve commissions, and former dietitians who are inactive are eligible for a period of one year in the Regular Army and Air Force provided they have not reached their thirty-fifth birthday at the time they entered extended active duty, regardless of present age. Under the previous act, Public Law 36, applicants must not have reached their thirty-fifth birthday at time of nomination for Regular Army commissions during 1947–48. Information and application forms may be obtained from the Office of the Surgeon General, Department of the Army, or Department of the Air Force, Washington 25, D. C.

A.D.A. Member Wins Contest. Mabel Mathias, North Western Hospital, Minneapolis, was the winner of Group II in the contest recently conducted by General Foods to learn "three things we do to make our eating place successful." Miss Mathias was awarded an all-expense paid trip for two people to the National Restaurant Association convention held in Chicago in May. The group for which she was the winner included hospitals and other institutions.

Miss Alexander Receives U.S.D.A. Award. Lucy Maclay Alexander, whose research on meat and poultry cookery established basic principles for writers of cook books and home and institutional cooks, is the first woman among seventeen men to receive the Distinguished Service Award of the U. S. Department of Agriculture. The Department's highest citation was presented to her on May 25. She developed the modern method of suiting temperature to the meat being cooked and of using low to moderate heat —instead of the former high temperature. She has supervised the cooking and judging of some 2900 cuts of beef, 3800 cuts of lamb, 1700 cuts of pork, 900 turkeys, and 300 chickens. She originated the idea of a meat cookery thermometer for housewives, which led manufacturers to make a special short, sturdy thermometer to insert in roasts.

Restaurant Convention in Chicago. More than 20,000 people attended the 31st National Restaurant Association Convention and Exposition in Chicago May 23 through 26. New officers elected are: President, Elston L. Ireland, Portland, Oregon, and Vice-President, Martin J. Harding, Chicago.

The program included sessions planned to interest various segments of the industry: industrial feeding, air line food service, small operations, college and university food service, department store restaurants, and self-service operations. General sessions of interest to all were also included. Col. Paul P. Logan presented a food show at which the following operations were demonstrated: frying chicken, pan and deep frying of fish, methods of cutting and cooking the major pieces of fresh pork loin, frying and poaching eggs, and making perfect iced tea.

A resolution was adopted to oppose proposed changes in meat grading recently announced by the U.S.D.A. on the basis that the proposed upgrading of beef does not increase the supply of higher grades and would cause confusion among buyers and consumers and result in higher prices for top grades of beef.

Alberta Macfarlane Resigns. Following the National Restaurant Association convention, the resignation of Alberta Macfarlane, for ten years Educational Director of that Association, became known. The Educational Department of the National Restaurant Association was organized at the time she first accepted her position, and she has helped to establish and develop a number of college-level and in-service training courses for restaurant careerists.

Southeastern Conference of Dietitians. The second annual meeting of the Southeastern Conference of Dietitians was held jointly with the Southeastern Hospital Conference on April 7. Officers elected for 1950–51 are: President, Elva Kahrs, New Orleans; President-Elect, Elma Benton, VA Hospital, Tuscaloosa, Alabama; Vice-President, Jane Hereford, Emory University Hospital, Emory, Georgia; Treasurer, Margaret Webb, Mercy Hospital, Vicksburg, Mississippi; and Secretary, Agnes G. Blazek, Charity Hospital, New Orleans. Dr. E. Neige Todhunter, representing the dietetic group, spoke on "The Contribution of the Dietitian to Good Hospital Procedure" and also reported on recent research in nutrition. Maniza Moore, past A.D.A. President, spoke on "Why Dietetics?" Elizabeth Heap, Diabetes Unit, Florida State Board of Health, talked on "The Role of the Dietitian in a Diabetes Control Program."

Booklet on Producing Visual Aids. The National Publicity Council for Health and Welfare Services has just published a thirty-two-page manual, "How to Turn Ideas into Pictures" by H. E. Kleinschmidt. The publication is designed to help health educators, research people, group and case workers, and administrative personnel acquire sufficient manual skill to illustrate publicity and educational materials. The author shows how simple strokes can illustrate an idea, get the attention of audiences, and increase their comprehension. The manual, priced at $1.00, is available from the publisher at 257 Fourth Avenue, New York 10.

Plentiful Foods. The U.S.D.A. Production and Marketing Administration has released the following list of foods expected to be plentiful in July:

Vegetables and fruits

Beans, snap	Onions
Beets	Potatoes, Irish
Carrots	Tomatoes
Corn, fresh	Watermelon
Lettuce	

Protein foods

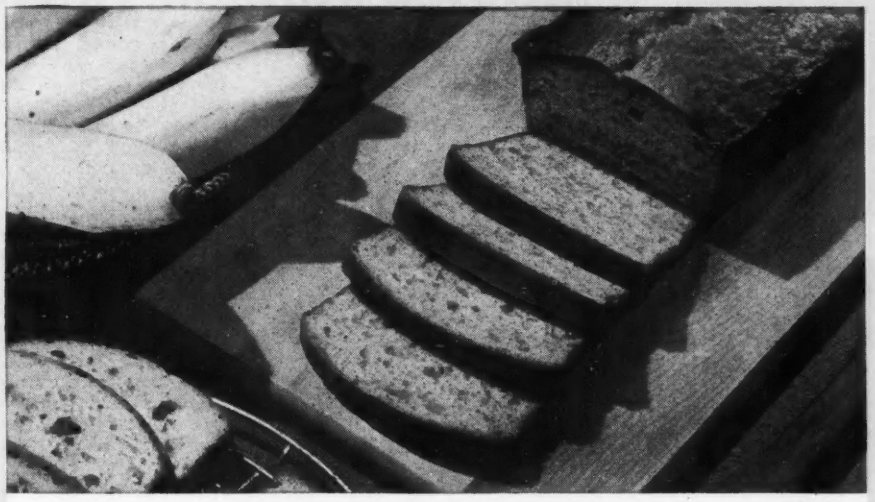
Chickens—broilers, fryers, and hens	Fish
	Peanut butter
Dairy products	Turkeys
Eggs	

Other foods

Rice

CHIQUITA BANANA SAYS:

Starred For Popularity
Banana Tea Bread



BANANA TEA BREAD

Scaling weight for 1 loaf: (30 ¼-inch slices) 1 pound 9 ounces	4 loaves (120 ¼-inch slices) 6 pound 8 ounce mixture		6 loaves (180 ¼-inch slices) 9 pound 6 ounce mixture	
INGREDIENTS	WEIGHTS OR MEASURES		WEIGHTS OR MEASURES	
	lbs. ozs.		lbs. ozs.	
Flour, sifted	1 12	1⅔ quarts	2 10	2½ quarts
Baking powder	1	2½ tablespoons	1½	3¾ tablespoons
Baking soda	¼	1½ teaspoons	⅜	2¼ teaspoons
Salt	¼	1½ teaspoons	⅜	2¼ teaspoons
Shortening	11	1⅓ cups	1	2 cups
Sugar	1 3	2⅓ cups	1 12½	3½ cups
Bananas*, peeled	2	10 medium-sized	3	15 medium-sized
Eggs	13	8	1 3	12
VARIATIONS				
BANANA RAISIN TEA BREAD				
Raisins, seedless	1 4	3⅓ cups	1 14	5 cups
BANANA NUT TEA BREAD				
Nuts, broken	8	2 cups	12	3 cups

Use either fully ripe or all-yellow bananas

Sift together flour, baking powder, soda and salt. Beat shortening until creamy. Add sugar gradually and continue beating until light and fluffy. Add bananas and beat until they are thoroughly mashed. Add eggs gradually, beating well after each addition. Add flour and mix only until smooth. Turn into well-greased bread pans (8½ x 4½ x 3 inches) and bake in a moderate oven (350°F.) about 1 hour 10 minutes, or until bread is done. For variations, add specified ingredient to flour mixture and proceed as above.

UNITED FRUIT COMPANY, Pier 3, N. R. New York

any meal
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-like bread

Banana Bread
makes delicious
toast.

Nutritious sandwiches!
This fresh fruit bread with
jelly, jams, cream cheese, or
peanut butter... good!

Bananas keep
breads and cakes
fresh and
moist

Best for baking—
fully ripe bananas...
yellow peel flecked
with brown

Quantity Recipes. The U.S.D.A. Bureau of Human Nutrition and Home Economics will soon begin releasing a series of "Recipes for Quantity Service." The recipes to be included are being tested in the Bureau's new institutional cookery laboratory, and the work will supplement that done on school lunch recipes. They will be standardized for quantities of 25, 50 and 100 servings. Acceptability, ease of preparation, and use of plentiful foods are the criteria for the recipes. Thus far recipes using potatoes, pork, turkey, canned peaches, and apples have been developed. Those wishing to receive these recipes as they are released may have their names put on the mailing list by writing to the Bureau of Human Nutrition and Home Economics, Washington 25.

News of State Associations

Alabama Dietetic Association. The spring meeting of the Alabama Dietetic Association was held in Tuscaloosa on April 28 and 29. A nutrition seminar was directed by Dr. E. Neige Todhunter. Dr. Seale Harris reviewed his most recent book, *Woman's Surgeon*, the life story of Dr. Marion Sims.

On Saturday, the session was held at the VA Hospital. Maniza Moore, VA Area Medical Office, Atlanta, spoke on "Effective Use of Non-Professional Supervisors in the Dietetic Service." "What Can We Do to Make Dietetics More Attractive as a Profession?" was the subject for a six-six discussion under the direction of Dr. Mary E. Lyons.

Officers for 1950–51 will be: President, Gertrude Holt, VA Hospital, Montgomery; President-Elect, Martha Moffit, VA Hospital, Tuscaloosa; Vice-President, Betty Herbertson, University of Alabama; Secretary, Margaret Carlton, University of Alabama; and Treasurer, Virginia Ritchie, Alabama Polytechnic Institute, Auburn.

Arkansas Dietetic Association. An educational exhibit featuring copies of the Arkansas Diet Manual was sponsored by the Arkansas Dietetic Association at the annual meeting of the Arkansas Medical Society in Fort Smith, March 17 to 19. The Manual was compiled with the help of hospitals and physicians. Endorsed by numerous health organizations, the Manual will be available to each physician, dietitian, public health nurse, and hospital in the state. It was financed by the Division of Hospitals of the State Board of Health. "Dietetics—The Career with a Choice" and "Dietitians Today" were also distributed at the exhibit booth.

The Arkansas Association issued its first bulletin on May 1. Called "The Arkansas Dietetic Association News Letter," it was a three-page, mimeographed publication.

California Dietetic Association. The *Bay Section* held a luncheon meeting at the nurses' residence of Mt. Zion Hospital in San Francisco in May. Miriam Piezer, Administrator of Maimonides Health Center, spoke briefly about the new hospital for the rehabilitation of the chronically ill and led a tour through the hospital. Irene Pierce, Nutritionist with the Oakland chapter of the American Red Cross, told of her duties as community nutritionist.

Florida Dietetic Association. This summer the Food Administration Section of the Florida Dietetic Association is planning to offer a workshop with the aim of assisting the administrative dietitian in better fulfilling her responsibilities.

Through the efforts of the Community Nutrition Section, a Jacksonville Food Council has been formed which includes in its membership a cross-section of people concerned with food—producers, processors, distributors, educators, and "users." At the first meeting, twenty-five people attended to hear Knox Hendrick, local representative of the Food and Drug Laboratories, speak. The following have been elected officers of the Food Council: President, Dr. C. L. Wrenshall, Foremost Dairies; Vice-President, Vera Walker, State Welfare Board; Secretary, Russell Jackson, head of the restaurant training program of the State Board of Health; and Treasurer, Carl Stoy of the Francis H. Leggett Company.

Georgia Dietetic Association. Some fifty dietitians attended the annual spring meeting of the Georgia Dietetic Association on May 12 at the General Oglethorpe Hotel on Wilmington Island near Savannah. Marguerite L. Pettee, A.D.A. Diet Therapy Chairman, discussed cooperation of members with the

A Versatile Aid In Low Sodium Diets

PATIENTS requiring diets low in sodium appreciate the wide, appetizing variety of low-sodium main dishes, salads and desserts made with Knox Unflavored Gelatine.

Knox Gelatine itself contains less than 30 mg. of sodium per 100 gm. of protein. Unlike ready-flavored gelatin dessert powders, with their high sodium and sugar content, Knox is *all* gelatine, *all* protein, with no sugar content and extremely low in sodium.

In the Knox package your patients will find suitable recipes with which to begin their regime of gel-cookery. Hundreds of additional recipes are available, using fresh vegetables, fruits and juices; lean meats, poultry and fresh-water seafood; and other ingredients of minimum sodium content.

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FREE SPECIAL DIETARY GUIDE BOOKS

A series of booklets devoted to menus and recipes for prescribed diets are available upon request. Address Knox Gelatine, Dept. M-14 Johnstown, N. Y.

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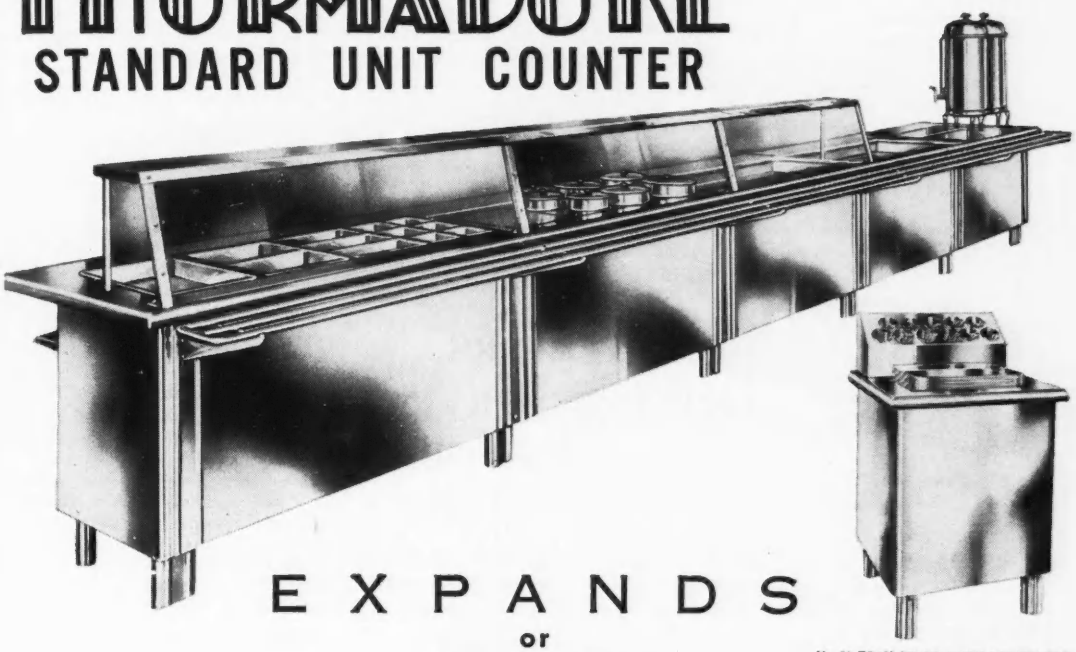
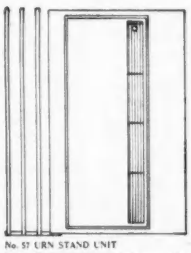


No. 70 TRAY STAND WITH LOWERATOR
No. 71 SILVERWARE DISPENSER

EXPANDS
or
CONTRACTS



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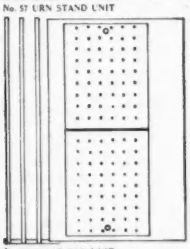

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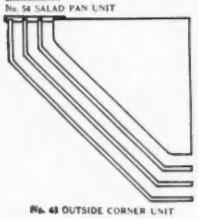

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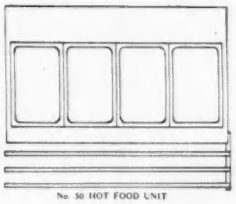

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IT'S NEW • IT'S MODERN • IT'S BEAUTIFUL

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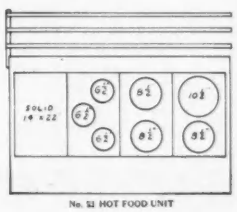

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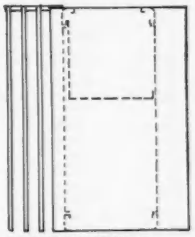
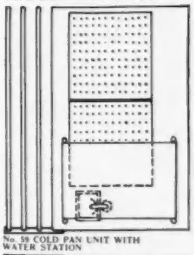
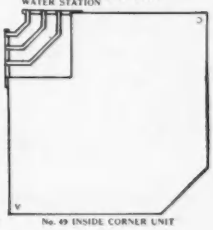


No. 47 CASHIER'S STAND UNIT



No. 58 COLD PAN UNIT WITH WATER STATION



No. 49 INSIDE CORNER UNIT

Association and the JOURNAL. Grant W. Husband, Psychiatric Social Science Consultant, Georgia Department of Public Health, spoke on "The Human Relationship Factor and the Dietitian." Two workshops were presented: "Nonprofessional Supervisors in the Dietary Service," led by Maniza Moore, and "Teaching Student Nurses," by Helen C. Wolfe. The state constitution, revised in accordance with the new national constitution, will become effective next year.

This spring the Georgia Association began publication of the *Georgia Dietetic Bulletin*. It is a printed, 8½ by 11 periodical, and Number 1, Volume 1 carried eight pages, including eight advertisements.

Officers for the coming year are: President, Nell Wier, Candler Hospital, Savannah; President-Elect, Priscilla Reynolds, Grady Hospital, Atlanta; Vice-President, Eleanor Thompson, VA Hospital, Atlanta; Secretary, Helen Wolfe, Armstrong Junior College, Savannah; and Treasurer, Frances Koeth, American Red Cross, Atlanta.

Indiana Dietetic Association. The spring convention of the Indiana Dietetic Association was held April 28 and 29 in Indianapolis. Ruth Yakel, Indiana University Medical Center, Indianapolis, spoke on "Modern Trends in Diet Therapy." She was followed by Dr. J. S. Battersby, Indiana University School of Medicine, whose topic was "Diet in Pre- and Post-Operative Cases." A movie, "Malnutrition in the Hospital Patient" was shown through the courtesy of E. R. Squibb and Sons. At the luncheon Margaret L. Ross, A.D.A. Director of Professional Activities, discussed Association affairs.

In the afternoon, following a business meeting, two talks were given: "Americans Are Gambling with Their Health" by Julia Kiene, Westinghouse Electric Manufacturing Company, Mansfield, Ohio; and "The Dietitian and Nutritionist Serve the Community" by Mary Reeves, Children's Bureau, Chicago. Dr. Russell M. Wilder, Professor of Medicine, Mayo Foundation, Rochester, Minnesota, spoke on "Newfoundland and Nutrition Studies: The Demonstration of Values of Improving Certain Food Supplies." On Saturday, N. E. Bess, Executive Secretary, Indiana Restaurant Association, spoke on "Current Trends in Foods." He also showed the National Restaurant Association's film, "America's Heritage of Hospitality." Richard Emery, Indianapolis Public Schools, talked on "Human Relations and Conference Techniques."

Officers for 1950–51 are: President, Kathryn Baker Sheedy, and Treasurer, Bettye Poppenseaker. The new constitution was adopted.

Some forty freshmen and sophomore girls and instructors from Indiana colleges and universities were guests at the annual Career Day for girls interested in dietetics held at the Indiana University Medical Center, Indianapolis, on March 11.

Iowa Dietetic Association. More than sixty dietitians attended the spring meeting in Des Moines on May 10. Helen Ehlert, VA Hospital, Knoxville, gave a "Report on Minnesota University Continuation School in Clinical Dietetics"; Helen N. Lovell, State Nutritionist, spoke on "The State Nutritionist at Work." Workshops on community nutrition, professional education, food administration, and diet therapy were conducted. At the luncheon, Tomoko Yamamoto, of the Des Moines Garden Club, told how to "Let Your Flowers Show Off." In the afternoon, Dr. William M. Sproul, Des Moines, discussed "Problems of Diet in Geriatrics." Ruth Nickel, St. Marys Hospital, Rochester, Minnesota, spoke on "Administration in the Institutional Kitchen."

Officers elected for 1950–51 are: President, May Morris, VA Hospital, Des Moines; President-Elect, Helen Goodenow, University of Iowa, Iowa City; Vice-President, Mary June Carter, University of Iowa Hospitals; Treasurer, Grace S. Shugart, Iowa State College, Ames; Secretary, Sister Grace Marie, Xavier Hospital, Dubuque. Section Chairmen will be: Community Nutrition, Mary M. Bieber, Des Moines; Diet Therapy, Evelyn Brandt, University of Iowa Hospitals; Food Administration, Sister Mary Agathon, St. Anthony Hospital, Marshalltown; and Professional Education, Marjorie M. McKinley, Iowa State College.

New Jersey Dietetic Asscoiation. A joint meeting of the New Jersey Dietetic Association, New Jersey Home Economics Association, and New Jersey Nutrition Council, was held in May. Floride

NEW PLAN!

LOWERS COST-PER-SERVING OF SOUPS FOR LOW SODIUM DIETS

After you satisfy the needs of your salt restricted and low sodium diets, add salt to taste and serve this soup to your other patients. Your average cost comes down as low as 1½ cents per serving.

You save money when you buy delicious Bernard soups for low sodium diets instead of paying $1.00 per pound for salt (often up to 50% by weight) contained in regular soups. You further cut cost per serving by adding your own salt and serving patients not requiring low sodium foods.

Our soups and our other foods for low sodium diets are noted for appetizing flavor and nourishing goodness. That is why you can use them for general feeding. Only the salt is left out. The soups are especially adaptable used in gravies and as flavoring for meat, since *you* can control the amount of salt used.

The following is a partial list of Bernard Quality Products, best and most economical to use. See how your patients enjoy our rich foods with low sodium content and see how you save by adding your own salt for general use.

NO SALT ADDED	Chicken Soup Base
	Beef Soup Base
	Mushroom Soup Base (Meatless)
	Celery Soup Base (Meatless)
	Vegetable Bouillon (Meatless)
	Pea Soup (Meatless)
	Jellied Consomme
	Creme Pudding Desserts
NO SUGAR ADDED	Gelatin Desserts
	Pudding Desserts
	And Other Special Diet Foods.

Write for complete price list and dietary breakdown

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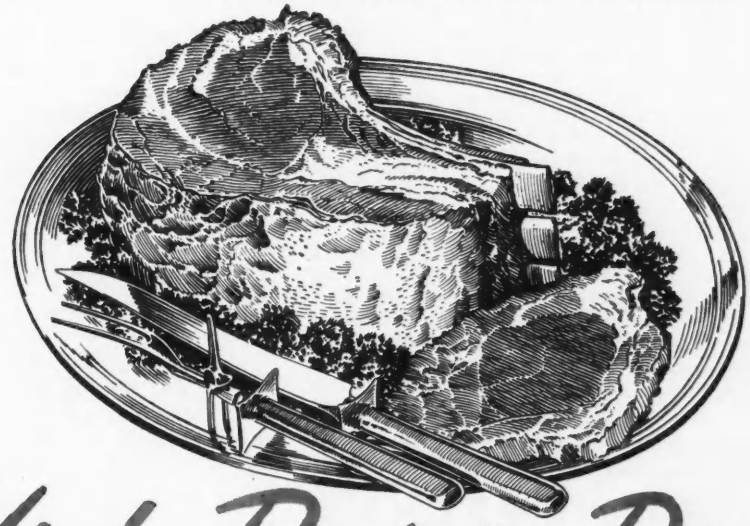

High Protein Diet

GAINS NEW RECOGNITION

High-quality, complete protein—the kind so abundantly provided by meat—is now widely recognized as being essential for vigor and well-being for everybody, from childhood through old age.

High-quality protein is also important for protection against many infections, before and after surgery, during pregnancy and for growth in children. It is valuable, too, in the treatment of diseases of the liver, in peptic ulcer, in functional disorders of the nervous system and in many states of vague ill health.

These are the conclusions of some of America's most distinguished physicians whose findings were recently reported by the dean of American medical nutritionists, James S. McLester, M. D.* This article reviews many new practices, now generally accepted in the field of nutrition, which are almost a complete reversal of ideas held before the war. As McLester notes, "Protein has come into its own."

IN OBSTETRICS

In one of the most far-reaching statements of recent years, it is pointed out that the generous use of high quality protein by the pregnant woman favorably influences her condition and also that of her child at birth. (Such babies, according to studies made at Harvard, have a better chance of starting life in superior condition.)

IN HEALING OF WOUNDS

Referring to the new widespread practice of feeding generous amounts of protein to surgical patients, McLester cites studies indicating that "proteins are essential to wound healing . . . maintenance of tissue . . . and expeditious convalescence."

Reference is made to the radical change that has come in the treatment of most forms of Bright's disease. These patients, formerly restricted to low protein diets, now when given a greatly increased quantity of protein show "significant improvement." More rapid healing of peptic ulcer has been reported with increased protein intake. "Improvement follows in many other forms of illness when the physician induces his patient to eat more meat."

"MOST DRAMATIC ABOUT-FACE"

Declared "the most dramatic about-face . . . in the recent history of nutrition" is the feeding of patients with diseases of the liver. Modern day diets which include a large amount of protein are "accomplishing unexpectedly happy results . . . and give testimony to the high value placed on protein today."

THE PROTEIN OF MEAT

Meat is recognized as America's favorite protein food. It is one of our primary sources of protein —is often called "the yardstick of protein foods" because of its abundance of complete, high-quality protein. In addition, meat contributes significant amounts of B complex vitamins and important minerals.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

*McLester, J. S.: Protein Comes Into Its Own, J.A.M.A. *139*:897 (April 2) 1949.

American Meat Institute
Main Office, Chicago . . . Members Throughout the United States

Moore spoke on "Education for Nutrition in Modern-Day Living."

The annual spring meeting was held May 10 in Plainfield. The program included a colored documentary film about New Jersey, musical entertainment, and reports from section chairmen.

Several dietitians contributed to the program of a "Manager's Course" held at the New Jersey School of Conservation July 3 to 7.

New York State Dietetic Association. Elizabeth Henry, Nutrition Advisor for the Visiting Nurse Association in Rochester, was chosen to be President-Elect of the New York State Dietetic Association for 1950–51 at the annual state convention in Buffalo in April.

At the annual dinner meeting of the *Rochester Dietetic Association*, Helen Hamilton, incoming President of the New York State Dietetic Association, talked on "Up and Down Main Street with the New York State Dietetic Association." In May, at the monthly meeting, Dorothy Ronto, Dietitian at Kodak Park, presented a film, "Employee Training" to the members.

North Carolina Dietetic Association. The spring meeting of the North Carolina Association was held in Raleigh on May 26. Evelyn M. Cox, Department of Home Economics, Women's College, and state Professional Education Chairman led a discussion on development in various phases of dietetics in North Carolina. Dorothy Ann McLean reported on dietary procedures at the VA Hospital, Fayetteville. Rebecca Rogers of Watts Hospital gave a report on the work of the Diet Therapy Section.

North Dakota Dietetic Association. The fifth annual convention of the North Dakota Dietetic Association was held May 10 in Grand Forks. A movie, "Malnutrition in the Hospital," was shown through the courtesy of E. R. Squibb and Sons, after the business meeting. Dr. L. P. Howell of the Mayo Clinic Section on Endocrinology, Rochester, Minnesota, spoke on "When the Dietitian Treats the Patient." Dr. E. A. Haunz, diabetic specialist at the Grand Forks Clinic, talked on the importance of the dietitian teaching diabetic patients. Winifred H. Erickson, A.D.A. Treasurer, spoke on "Association Affairs," at the banquet. Thirty companies exhibited products at the convention.

Officers elected for 1950–51 are: President, Lorraine Witt, Consulting Dietitian, Grand Forks Clinic; Vice-President, Elvira Smith, North Dakota Agricultural College, Fargo; Secretary, Dorothy Laudon, Jamestown Hospital, Jamestown; and Treasurer, Sister Mary Martha, St. Alexius Hospital, Bismarck.

Ohio Dietetic Association. Graduating activities for the dietetic interns at Good Samaritan Hospital, *Cincinnati*, included a roof-top picnic, a progressive party at the homes of the staff dietitians, a supper, and a dinner. Sister Marie Charles, Superintendent of the hospital, awarded class pins and diplomas before the final dinner.

The *Cleveland Dietetic Association* held its last meeting of the year at Cleveland City Hospital on May 19. Fern Gleiser, University of Chicago, previewed a film by the National Restaurant Association on training and personnel practices called "Company's Coming." Officers of the Cleveland Association for the coming year are: President, Anna Banus Darling, Western Reserve University; President-Elect, Marjorie Curry, Cleveland Clinic Foundation; Vice-President, Marie Lavelle, Cleveland City Hospital; Secretary, Elsie Vargo, Lutheran Hospital; and Treasurer, Esther Uhlman, St. Luke's Hospital.

Oklahoma Dietetic Association. Nell Clausen, former A.D.A. President, was guest speaker at the *Tulsa Dietetic Association* dinner meeting on May 19. Her subject was "Our Responsibilities as Dietitians." Officers elected for 1950–51 are: President, Esther Musil, Tulsa Dairy Council; Vice-President, Kathleen Atha, Oklahoma Natural Gas Company; and Secretary-Treasurer, Carolyn Hixson, Springer Clinic.

Oregon Dietetic Association. A joint meeting of the Oregon Nutrition Council, Home Economics Association, and Dietetic Association was held on April 29 in Portland. William Selleck, Public Relations Council of Portland, was guest speaker. "How Can We Improve Our Public Relations?" was the theme of the workshop held after his discussion.

The *Portland Dietetic Association* held

3 ZONE TOASTING

...better toast at lower cost!

There's no watching or waiting—no lost time or motion with the Savory conveyor type toaster. All you do is place the bread slices on the continuously moving conveyor. The conveyor automatically carries bread through three heat zones which progressively toast it to just the right golden brown color with crisp outer surfaces and soft, tender centers. When the toast is done, the conveyor automatically unloads the finished toast into the serving tray.

You get toast of the finest quality without waste time or waste motion when you use a Savory Toaster.

Savory Toasters can be obtained in 6-to-12-slice per minute capacities. Also bread, bun or sandwich models. Gas or electric operated. Lustrous stainless steel construction.

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That's what the new Women's Medical Specialist Corps can mean to you—a modern magical key to a satisfying and rewarding career in the U. S. Army or the U. S. Air Force.
Recently organized, the WMSC offers you young professional women—holders of a baccalaureate degree and a certificate in the specialty—original commissions as Second Lieutenants and an opportunity for a wide clinical practice rarely found in civilian pursuits.
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Medical
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for Cleaner Dishes, Faster... at Lower Cost

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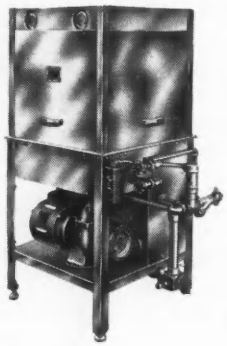
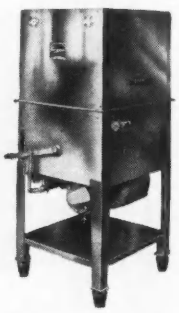


R-1A Rack Type
1250 Dishes per hour

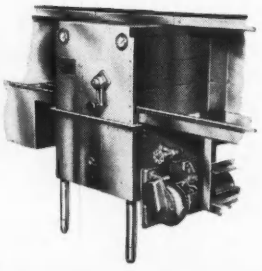
Here's how one prominent restaurant chain made substantial savings in operating costs.

By installing Colt Autosan Rack Type Dishwashers, (in this instance, Model CU-16) they were able to eliminate the employees who had been doing hand washing. Wage savings in the first year more than offset the installation costs. Colt Autosan built-in durability assures many years of low-cost, trouble-free service.

You can make similar savings with Colt Autosan . . . the *complete* line of Dishwashing, Sanitizing and Drying Machines and Food Mixers . . . all expertly engineered . . . and built to last. Call your dealer or write for additional information. Colt's Manufacturing Co., Hartford 15, Connecticut.



R-16 Rack Type
900 Dishes per hour



CU-16 Under-Counter
Rack Type
900 Dishes per hour

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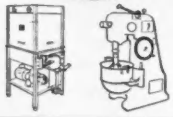


DISHWASHING, SANITIZING,
DRYING and MIXING MACHINES

its spring dinner meeting on May 10. A representative from Heitkemper Jewelry, Portland, demonstrated "Gracious Living" with table settings of china, silver, and glassware.

Pennsylvania Dietetic Association. The annual convention of the Pennsylvania Dietetic Association was held in Philadelphia, April 27 and 28. The first day's program was as follows:

"Mental Hospitals," by Florence Peters, Nutrition Consultant, Pennsylvania State Department of Welfare
"The Future of the Dietitian in Hospitals, Medical Centers, and Colleges," by Dr. Robin Buerki, University Hospital Administrator
"A Viewpoint of Human Relations" by Dennis M. Fennelly, Personnel Relations Director, Pennsylvania Hospital
"Nutrition and Aging" by Dr. Edward Bortz, Lankenau Hospital.

An early morning trip to Dock Street and the Fruit Auction initiated the Friday morning program on current events. Speakers of the day and their topics were:

"Accident Prevention," by William J. Nyland, American Travelers Insurance Company
"The Hoover Report" by LaMarr Rice, Temple University
"Simplified Method of Calculating Diabetic Diets" by Helen McNavish, Pennsylvania Hospital

The afternoon session included three papers:

"Animal Studies on the Relation of Nutrition to Poliomyelitis" by Claire Foster Weaver, The Children's Hospital, Philadelphia
"Recent Investigation on the Effects of Nutritional Factors in Disease of the Liver," by Dr. Catharine S. Rose
"Nutritional Advances through Atomic Energy" by Dr. Bernard Roswit, VA Hospital, Bronx, New York

Officers elected for the coming year are: President, Esther A. Atkinson, Pennsylvania State College; President-Elect, Sophia Podgorski, State Department of Health, Harrisburg; Vice-President, Mary Lucille Peters, Allentown Hospital; Secretary, Betty Persing, Pennsylvania State College; and Treasurer, Margaret C. Madden, Psychiatric Hospital, Philadelphia.

South Carolina Dietetic Association. Two publications, "Dietetics—A Career for Better Living" and "Dietitians Today" have been distributed to twenty-five high schools in South Carolina.

A scholarship of $50 was awarded to an outstanding senior at Winthrop College graduation exercises in Rock Hill on June 5. The award, first of an annual plan, was presented by the Association to help a dietetic intern in her fifth year of study.

South Dakota Dietetic Association. The A.D.A. Executive Board has accepted the application of the South Dakota Dietetic Association for state association affiliation. The Association

NEW non-caloric sweetener stays sweet . . . even in cooking, baking, canning

NOTE THE NAME **Sucaryl** SODIUM
TRADE MARK
(CYCLAMATE SODIUM, ABBOTT)

● *Non-caloric sweetener for restricted and low-calorie diets*

With SUCARYL Sodium, Abbott's new non-caloric sweetening tablets, patients on restricted or low-calorie diets will have immeasurably greater freedom in menu-planning—for now even those foods prepared by ***cooking, baking*** or ***canning*** can be sweetened without adding forbidden calories or carbohydrates.

And whether used in cooking, or simply added to hot or iced drinks, SUCARYL has ***no bitter after-taste*** when used in reasonable amounts.

Reports of clinical trials convey the enthusiasm with which patients have accepted SUCARYL. They not only welcome its wide range of uses as contrasted with saccharin, which loses its sweetness in cooking processes, but are virtually unanimous in their preference for the taste of SUCARYL.

Thus, for many housewives, the problem of preparing a special diet for one person will no longer be troublesome because dishes sweetened with SUCARYL will taste good to the entire family.

Each eighth-gram tablet of SUCARYL is equivalent in sweetening power to one teaspoonful of sugar. Tablets are effervescent to shorten dissolving time, grooved for easy separation to suit individual tastes.
SUCARYL Sodium is supplied in handy bottles of 100 tablets, as well as bottles of 1000, available at pharmacies only. Abbott

SEND COUPON FOR DIETITIAN'S SAMPLE

Abbott Laboratories
North Chicago, Illinois

Please send me a dietitian's sample of 100 tablets of your new non-caloric sweetener, SUCARYL Sodium.

Name

Address

City and State

sends its congratulations with official acceptance.

Tennessee Dietetic Association. On May 17, 18, and 19, the Tennessee Dietetic Association joined with the University Center in Memphis in sponsoring an institute for dietitians and home economics graduates. One session was devoted to administrative problems with talks on menu planning and purchasing, employee training, and food service equipment and layouts. The topic for the second session was diet therapy, with papers on diabetes, patient instruction, anemias, cardiovascular and renal vascular disease, peptic ulcer, and current research in nutrition. The third session pertained to community nutrition and included speeches on teaching student nurses, organization and operation of a food clinic, ward rounds, and group instruction in low-sodium diets.

The *Knoxville Dietetic Association* has elected the following officers for 1950–51: President, Elizabeth J. Yeo; Vice-President, Jeanne Sheridan; and Secretary, Mrs. Philip O'Hara.

Officers for the coming year for the *Nashville-Davidson County Dietetic Association* will be: President, Shirley Patton; Vice-President, Dorothy Pruitt Bevington; and Secretary-Treasurer, Myrtle Neblett.

Virginia Dietetic Association. The spring meeting of the Virginia Dietetic Association was held April 21 and 22 in Lexington. The program included the ollowing papers:

"Nutrition in Rheumatic Fever," by Dr. W. E. Chapin, State Department of Health, Richmond

"Employee Training" by Rosemary L. Lodde, Veterans Administration Central Office, Washington

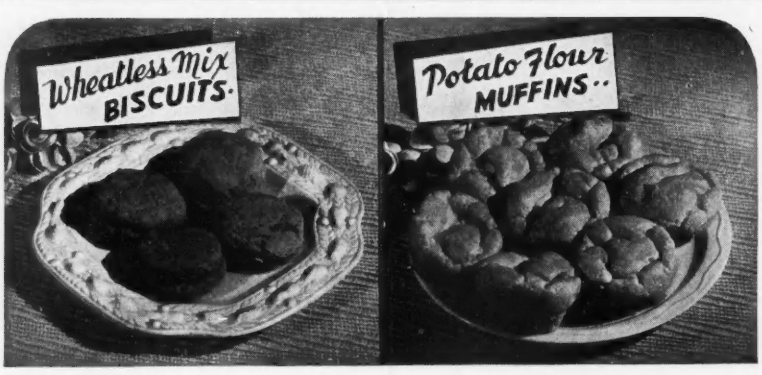
"Dietary Management of the Obese Patient" by Dr. Reverdy H. Jones, Jr., Gale Hospital, Roanoke

"The Dietitian, Past, Present, and Future" by Dr. Mary deGarmo Bryan, Teachers College, Columbia University, New York City.

At the luncheon, Marion D. Floyd, U. S. Public Health Service, Washington, and A.D.A. Food Administration Chairman, spoke on "How Virginia Dietitians Can Improve Their Public Relations."

Washington State Dietetic Association. The Washington Association's April meeting was held at the Swedish Hospital Nurses' Home, Seattle. The program consisted of workshop sessions devoted to diet therapy and administrative work.

At the Dietetic Section of the Western Hospital Association held in Seattle in April, Mary W. Northrop, Chief Dietitian and Housekeeper, King County Hospital System, addressed the group on "Planning and Organizing Dietary Departments." Her talk was followed by a program on public relations which included as speakers: Dr. Laura Crowell, Professor of Speech, University of Washington; Ruth Fratt, Home Economics Director of Station KOMO, and Maurine Kelly, Home Economics Director of the Seattle *Post-Intelligencer*.



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WHEAT-FREE, EGG-FREE, MILK-FREE

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SEND FOR FREE BOOKLET
"Allergy Diets" shows menus, tasty recipes, etc.

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Association Activities

Representatives to State Meetings. Alice H. Smith represented the Association at the annual meeting of the Arkansas Dietetic Association in Hot Springs on May 30 and 31. This meeting was held in conjunction with that of the Arkansas Hospital Association.

Another joint meeting, that of the Louisiana Dietetic and Hospital Associations was held in Shreveport June 20-July 1. A.D.A. planned to send a representative.

A.D.A. Represented at Dedication. The dedication of the National Dairy Research Laboratories at Oakdale, Long Island, New York, was held on June 2. Our representative was Alta B. Atkinson. In addition to a conducted tour of the laboratories and a luncheon, the dedication exercises included a conference on the "Role of Research in the Conservation of Our Nutritional Resources." Speakers were L. A. Van Bomel, W. Rupert MacLaurin, Dr. Charles G. King, Dr. Fairfield Osborn, Dr. Karl Compton, and Louis Bromfield.

Association Meetings. A.D.A.'s Loan Library Committee is continuing its activity of analyzing the older periodicals in the library files. Worthwhile articles are being clipped for reference, and space is being made for newer materials. The last meeting was held on June 13.

The Educational Exhibits Committee met on June 7 to review the reports from the conventions at which A.D.A. has exhibited this year. Plans also were discussed for future exhibits, including A.D.A. material to be featured at our own annual meeting in Washington.

A meeting of the Joint Committee of the American Hospital Association and the American Dietetic Association was held in Chicago on June 28.

The mid-year meeting of the Association's Executive Board will be held in Chicago July 22.

National Conventions. The Kodachrome exhibit, "Dietetics, the Career with a Choice," was on display at the Catholic Hospital Association Convention in Milwaukee, June 12 to 15. Members of the Milwaukee Dietic Association were in charge of our booth.

This same exhibit will be on display at the 41st Annual Meeting of the American Home Economics Association in Boston July 11 to 14.

Since the food model exhibit was shown at the Biennial Nursing Convention in San Francisco in May, its travel schedule has been a busy one. Featuring the low-caloric diet, the exhibit was sent on to Brooke General Hospital, Fort Sam Houston, Texas, for Armed Forces Day on May 21. According to reports, 8000 people were clocked at this exhibit. After this event, it was returned to Chicago to be changed to "The Diet of a 10–12-Year-Old Child." In this form it was sent to the Annual Health Education Workshop of Kansas in Lawrence, June 19–23.